HCD-MD515

RM-MD515

SERVICE MANUAL

US Model
AEP Model
UK Model
E Model
Tourist Model

Self Diagnostics Supported model

RM-MD515

HCD-MD515

HCD-MD515 is the Amplifier, CD player, MD Deck and Tuner section and RM-MD515 is the Detachable Controller section in DHC-MD515.

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CD Section	Model Name Using Similar Mechanism	NEW
	CD Mechanism Type	CDM48-5BD29
	Base Unit Name	BU-5BD29
	Optical Pick-up Name	KSS-213BA/F-NP
MD Section	Model Name Using Similar Mechanism	NEW
	MD Mechanism Type	MDM-C1D
	Base Unit Name	MBU-C1
	Optical Pick-up Name	KMS-260A/J1N

SPECIFICATIONS

Amplifier section

European model:
DIN power output (Rated)
30 + 30 watts
(6 ohms at 1 kHz, DIN, 230 V)
Continuous RMS power output (Reference)
40 + 40 watts
(6 ohms at 1 kHz, 10% THD)
Music power output (Reference)
60 + 60 watts

Other models:
DIN Power output (Rated)
30 + 30 watts (60 ohms at 1 kHz, DIN, 120/240 V)
Continuous RMS power output (Reference)
40 + 40 watts
(6 ohms at 1 kHz, 10% THD)
Peak music power output (Reference)
700 watts

Inputs
VIDEO/GAME IN (phono jacks) (switchable)
GAME IN: voltage 450 mV, impedance 47 kilohms
VIDEO IN: voltage 250 mV, impedance 47 kilohms
TAPE IN (phono jacks): voltage 250 mV, impedance 47 kilohms

Outputs
TAPE OUT (phono jacks): voltage 250 mV impedance 1 kilohm
PHONES (stereo mini jack): accepts headphones of 8 ohms or more.
SPEAKER: accepts impedance of 6 to 16 ohms.

CD player section

System: Compact disc and digital audio system
Laser: Semiconductor laser (λ=780 nm)
Emission duration: continuous
Laser output: Max. 44.6 μW*
*This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick-up Block with a 7 mm aperture.
Frequency response: 2 Hz – 20 kHz

MINI Hi-Fi COMPONENT SYSTEM

MICROFILM

SONY®

MD deck section

System	MiniDisc digital audio system
Laser	Semiconductor laser (λ=780 nm) Emission duration: continuous
Laser output	Max. 44.6 μW* *This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick-up Block with a 7 mm aperture.
Recording time	74 minutes max. (using MDW-74)
Sampling frequency	44.1 kHz
Frequency response	5 Hz to 20 kHz

Tuner section

FM stereo, FM/AM superheterodyne tuner

FM tuner section

Tuning range	
US model:	87.5 – 108.0 MHz (100 kHz step)
Tourist model:	76.0– 108.0 MHz (50 kHz step)
Other models:	87.5 – 108.0 MHz (50 kHz step)
Antenna	FM lead antenna
Antenna terminals	75 ohm unbalanced
Intermediate frequency	10.7 MHz

AM tuner section

Tuning range	
US model:	
AM	531 – 1,710 kHz (with the interval set at 9 kHz) 530 – 1,710 kHz (with the interval set at 10 kHz)
European model:	
MW:	522 – 1,611 kHz (with the interval set at 9 kHz)
LW:	144– 288 kHz (with the interval set at 3 kHz)
Other models:	
MW:	531 – 1,602 kHz (with the interval set at 9 kHz) 530 – 1,710 kHz (with the interval set at 10 kHz)
SW:	5.95 – 17.90 MHz
Antenna	AM loop antenna External antenna terminals
Intermediate frequency	450 kHz

General

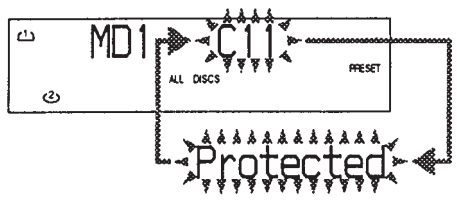
Power requirements	
US model:	120 V AC, 60 Hz
European model:	220 – 230 V AC, 50/60 Hz
Other models:	110 – 120 V or 220 – 240 V AC, 50/60 Hz adjustable with the voltage selector
Power consumption	85 watts
Dimensions	(With the controller attached) Approx. 215 x 290 x 400 mm (w/h/d) incl. projecting parts and controls (With the controller detached) Approx. 215 x 290 x 390 mm (w/h/d) incl. projecting parts and controls
Mass	Approx. 9.5 kg

Design and specifications are subject to change without notice.

SELF DIAGNOSTICS

Using the Self-Diagnostic Display

This system has the Self-Diagnostic function to let you know if there is a system malfunction. The display shows a code made up of three letters and a message alternately to show you the problem. To solve the problem, refer to the following list. If any problem persists, consult your nearest Sony dealer.



C11/MD Protected

The MD is protected against erasure.

→Remove the MD and slide the tab to close the slot (page 33)

C13/REC Error

Recording is not possible.

→Move the system to a stable place and start recording over from the beginning.

The MD is dirty or is scratched./The MD does not meet the standards.

→Change the MD with another one and start recording over from the beginning.

C13/Disc Error

The MD deck cannot read the disc information correctly.

→Eject the MD once, then insert it again.

C14/Disc Error

The MD deck cannot read the disc information correctly.

→Change the MD with another one.

→If you don't mind erasing all the recorded contents of the MD, erase them using the Erase function on page 48.

MD SECTION

1. OPERATING THE ERROR HISTORY MODE

All operations are performed using the MULTI JOG dial and PROGRAM button.

1. Enter the test mode for MD function. (*1)
2. Turn the MULTI JOG dial and display “ERR DP MODE”.
3. Press the ENTER/YES button, therefor enter the error history mode and change the display “total rec”.
4. Press the EDIT/NO button, therefor end the error history mode and change the display “ERR DP MODE”.

(*1) See the “SECTION 4 TEST MODE” (page 21) for detail of test mode.

2. OPERATING THE DISPLAYED HISTORYS

1. Turn the MULTI JOG dial and change the display of error history contents.
2. Press the PROGRAM button and display error history function.
3. Press the PROGRAM button again and back the display of error history contents.

Table 1.

Contents	Function	Display
total rec	Total time of laser power high. About 20% of total recording time.	r□□□□□□h
total play	Total time of playback.	p□□h
retry error	Total count of record and playback retry error.	r□□ p□□
total error	Total count of error.	total□□
err history	Error contents display of from latest one“00” to last ten “09”. (Turn the MULTI JOG dial and change the error NO.)	0□ E□□ (*2)
err refresh (*3)	Press the PROGRAM button and clear the error histories memory	complete

(*2) See table 1-1. for contents of each error code.
(*3) Error refresh with optical pick-up exchange, another not execute.

Table 1-1.

Display (error No./code)	Contents
0:□ E00	No error
0:□ E01	Disc error PTOC does not read
0:□ E02	Disc error UTOC does not read
0:□ E03	Loading error
0:□ E04	Address does not read
0:□ E05	Out of FOK
0:□ E06	Focus does not work
0:□ E07	Retry of record
0:□ E08	Record retry error
0:□ E09	Retry of Playback
0:□ E0A	Playback retry error

CD SECTION

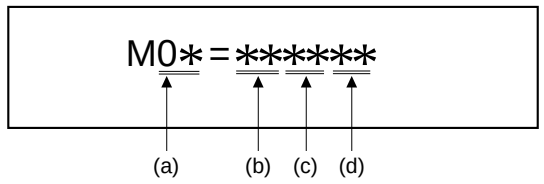
1. OPERATING THE DISPLAYED HISTORYS

1. Press the DIMMER button, DBFB button, and CD 1⏏ button simultaneously and enter the test mode.
2. Press the PROGRAM button, and mechanical error count and the cout of “NO DISC” that optical system judged are displyed.
3. Under this condition press the buttons in Table 2, and the respective operations are executed as listed below.

Table 2.

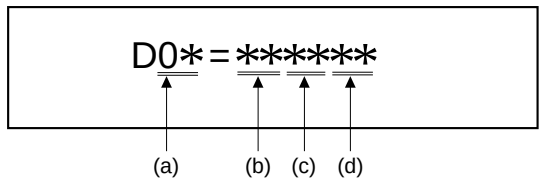
Button	Function
MD/CD 1	Mechanical error cord from latest one to last ten are displayed each time this button is pressed. (*1)
MD/CD 2	The reasons of “NO DISC” from latest one to last ten are displayed each time this button is pressed. (*2)
CD 1⏏	Reset the count of mechanical error.
CD 2⏏	Reset the count of “NO DISC”.

(*1) Mechanical error code



(a) The number of Mechanical error.
Latest one “00” to last ten “09”
(Turn the MULTI JOG dial and change the error No.)
(b) “FF”: Mechanical error, when mechanical initialize to completion.
Others: Mechanical error in the midst of mechanical initialize.
(c) “4*”: Mechanical error in the midst of mechanical initialize, when sub tray set into the stocker.
“5*”: Mechanical error in the midst of mechanical initialize, when sub tray take out to the stocker.
(d) “2*”: Mechanical error in the midst of elevator moving.

(*2) NO DISC error code



(a) The number of NO DISC error.
Latest one “00” to last ten “09”
(Turn the MULTI JOG dial and change the error No.)

(b) “01”: Focus error
“02”: GFS error
“03”: Set up error

(c) “00”: NO DISC error (Does not chucking retry)
“02”: NO DISC error (Chucking retry to completion)

(d) The status, when judged NO DISC error.
“3*”: Stop
“4*”: Set up
“5*”: TOC read
“6*”: Access
“7*”: Play
“8*”: Pause
“9*”: Manual search (Play)

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SECTION 1
SERVICING NOTES

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic break-down because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic break-down and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

Flexible Circuit Board Repairing

- Keep the temperature of the soldering iron around 270 ˚C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

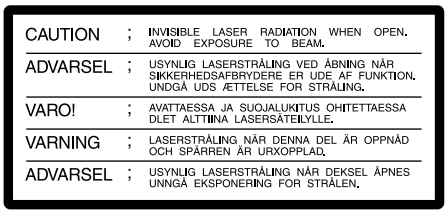
CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

This appliance is classified as a CLASS 1 LASER product. The CLASS 1 LASER PRODUCT MARKING is located on the rear exterior.

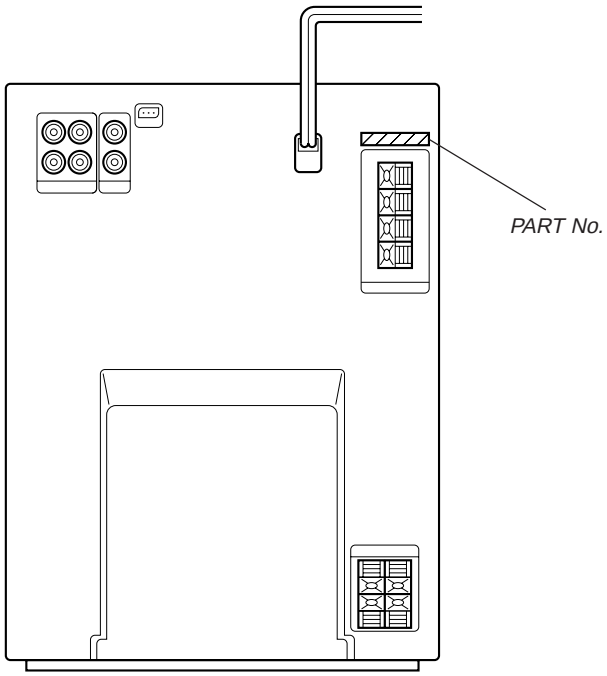
Laser component in this product is capable of emitting radiation exceeding the limit for Class 1.

The following caution label is located inside the unit.


CAUTION ; INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM.
ADVARSEL ; USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDS ÆTTELSE FOR STRÅLING.
VARO! ; AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA LASERSÄTEILYLLE.
VARNING ; LASERSTRÅLING NÄR DENNA DEL ÄR OPPNÅD OCH SPÄRREN ÄR URXOPPLAD.
ADVARSEL ; USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES UNNGÅ EKSPONERING FOR STRÅLEN.

MODEL IDENTIFICATION

– Back Panel –



MODEL	PARTS No.
AEP, UK, German and North European models	4-993-619-1☐
Malaysia and Singapore models	4-993-619-2☐
Hong Kong model	4-993-619-3☐
US model	4-993-619-4☐
Tourist model	4-993-619-6☐

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety check before releasing the set to the customer:
Check the antenna terminals, metal trim, “metallized” knobs, screws, and all other exposed metal parts for AC leakage.
Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers.). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers’ instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The “limit” indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

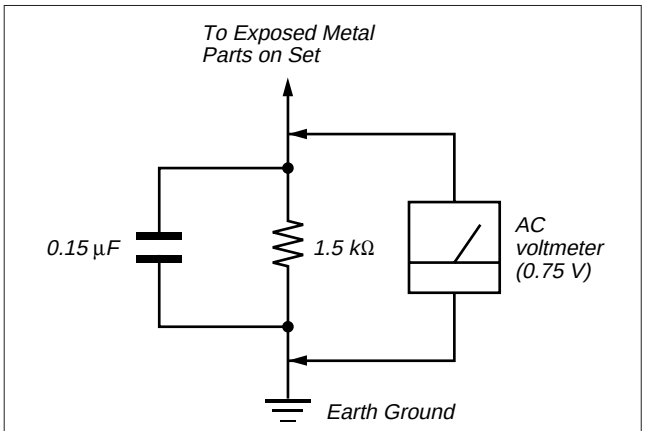
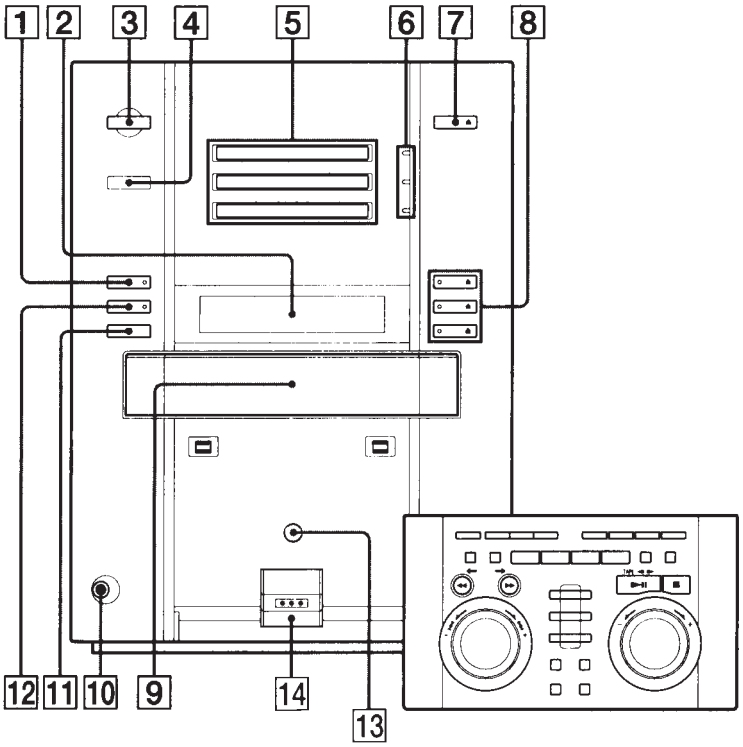


Fig. A. Using an AC voltmeter to check AC leakage.

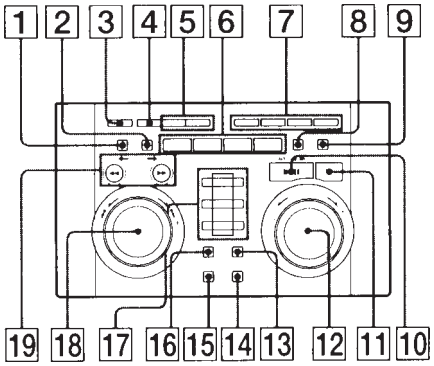
SECTION 2
GENERAL

LOCATION OF CONTROLS
– Main Unit (HCD-MD515) –



1 GROOVE button and indicator
2 Fluorescent indicator tube
3 POWER button
4 Remote sensor (for optional remote controller)
5 MD slots
6 MD 1 to 3 indicator
7 MD ⏏ button
8 CD 1 to 3 ⏏ (open/close) button and indicator
9 CD disc tray
10 PHONES jack
11 DIMMER button
12 DBFB button and indicator
13 Remote sensor (for detachable controller)
14 Detachable controller terminal

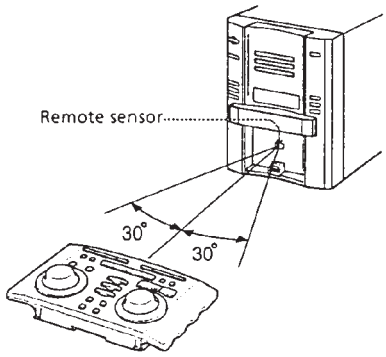
– Detachable Controller (RM-MD515) –



1 EDIT/NO button
2 ENTER/YES button
3 POWER button
4 PRESET EQ button
5 CLOCK/TIMER SET button
CLOCK/TIMER SELECT button
6 TAPE button
MD button
CD button
TUNER (BAND) button
7 MANUAL, CONTINUE button
AUTO, SHUFFLE button
PRESET, PROGRAM button
STEREO/MONO, REPEAT button
8 FUNCTION button
9 DISPLAY button
10 ▶II button
11 ■ button
12 VOLUME dial
13 DISC SKIP button
14 REC/CD-MD SYNC button
15 REC IT button
16 CD LOOP button
17 MD/CD 1 to 3 button
18 MULTI JOG dial
19 ◀◀ ← button
▶▶ → button

This section is extracted from instruction manual.

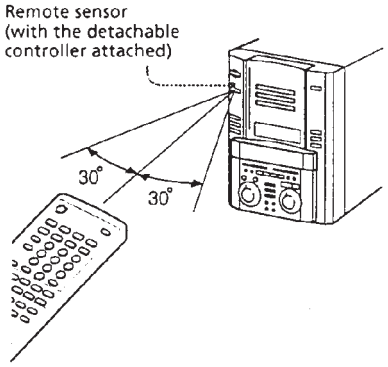
Using the detachable controller from a distance



Point the detachable controller at the remote sensor on the main unit.

To use an optional remote

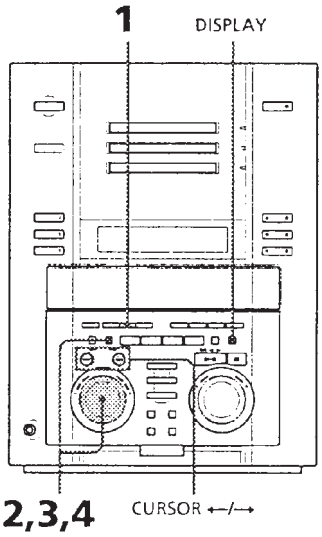
When using an optional remote with the detachable controller attached, point it at the remote sensor in the upper left corner of the main unit.



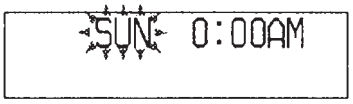
When the detachable controller is detached, point an optional remote at the remote sensor at the bottom of the main unit. The remote sensor in the upper left corner of the main unit does not work when the detachable controller is detached.

Step 2: Setting the time

You must set the time before you can use the timer functions. The clock is on a 24-hour system for the European model, and a 12-hour system for other models. The 12-hour system is used for illustration purpose. You can set the time while the power is off.



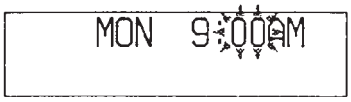
1 Press CLOCK/TIMER SET.
The day of the week indication ("SUN") flashes.



2 Turn MULTI JOG to set the day of the week, then press ENTER/YES.
The hour indication flashes.

Step 2: Setting the time (continued)

3 Turn MULTI JOG to set the hour, then press ENTER/YES.
The minute indication flashes.



4 Turn MULTI JOG to set the minute, then press ENTER/YES.
The clock starts.

If you have made a mistake

Press CURSOR ← or → repeatedly so that the incorrect setting flashes, then set it again.

To change the preset time

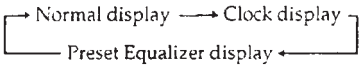
You can set the time or change the preset time while the power is on.

1 Press CLOCK/TIMER SET.
2 Turn MULTI JOG until "SET CLOCK ?" appears.
3 Press ENTER/YES.
4 Repeat steps 2 through 4 above.

To display the clock

The built-in clock shows the time in the display while the power is off. To display the time while the power is on, press DISPLAY.

Each time you press the button, the display changes as follows:

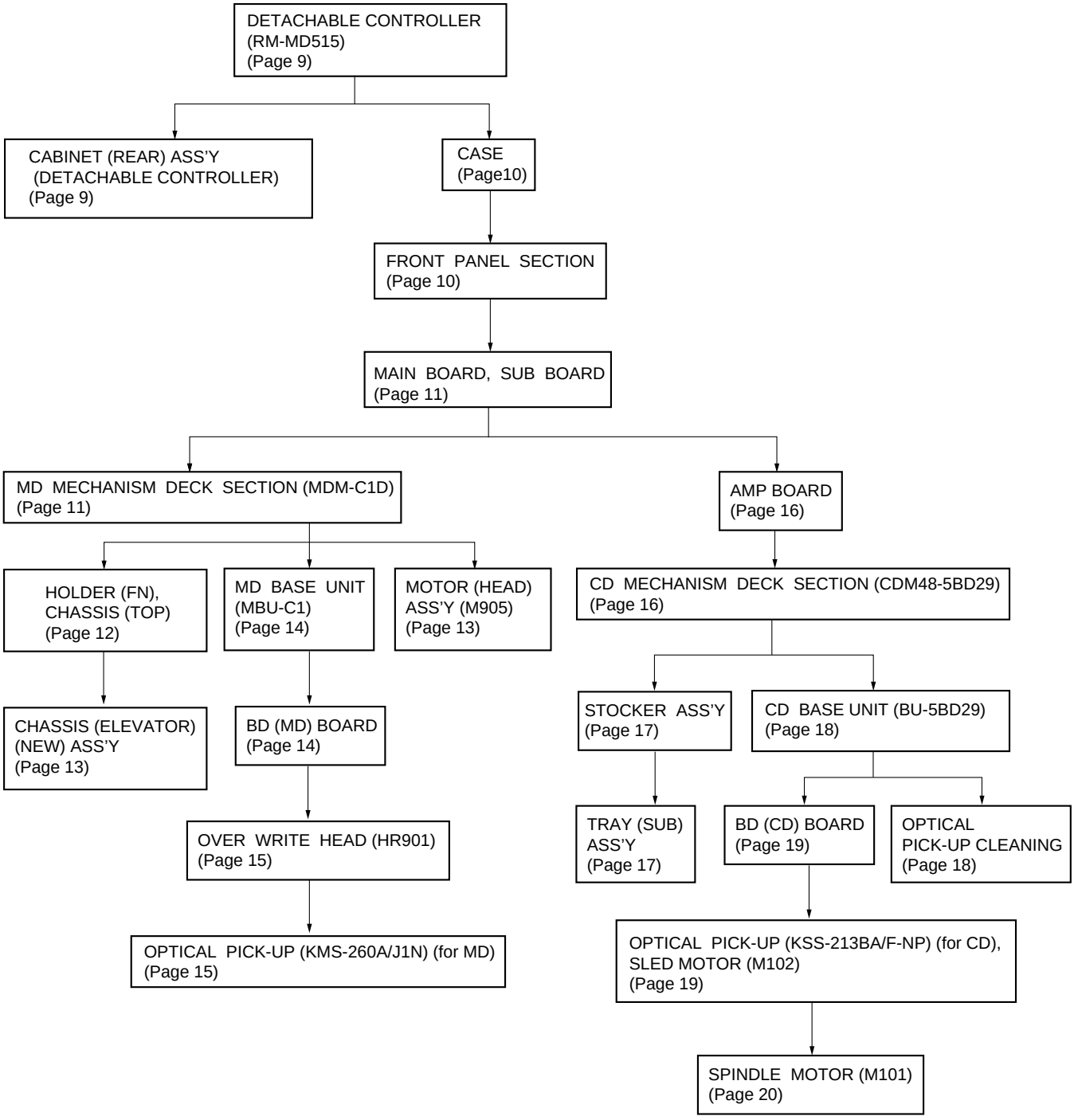


Tip

The upper dot flashes for the first half of a minute (0 to 29 seconds), and the lower dot flashes for the last half of a minute (30 to 59 seconds).

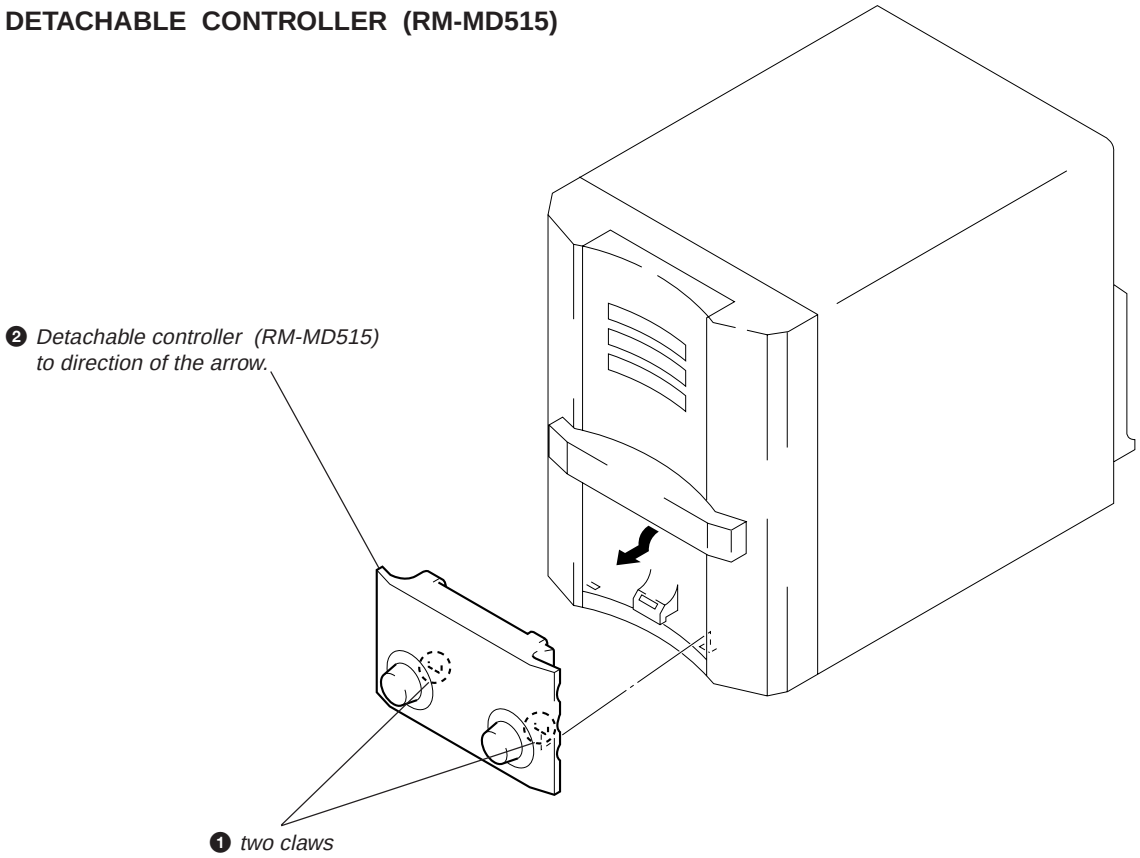
SECTION 3
DISASSEMBLY

- This set can be disassembled in the order shown below.

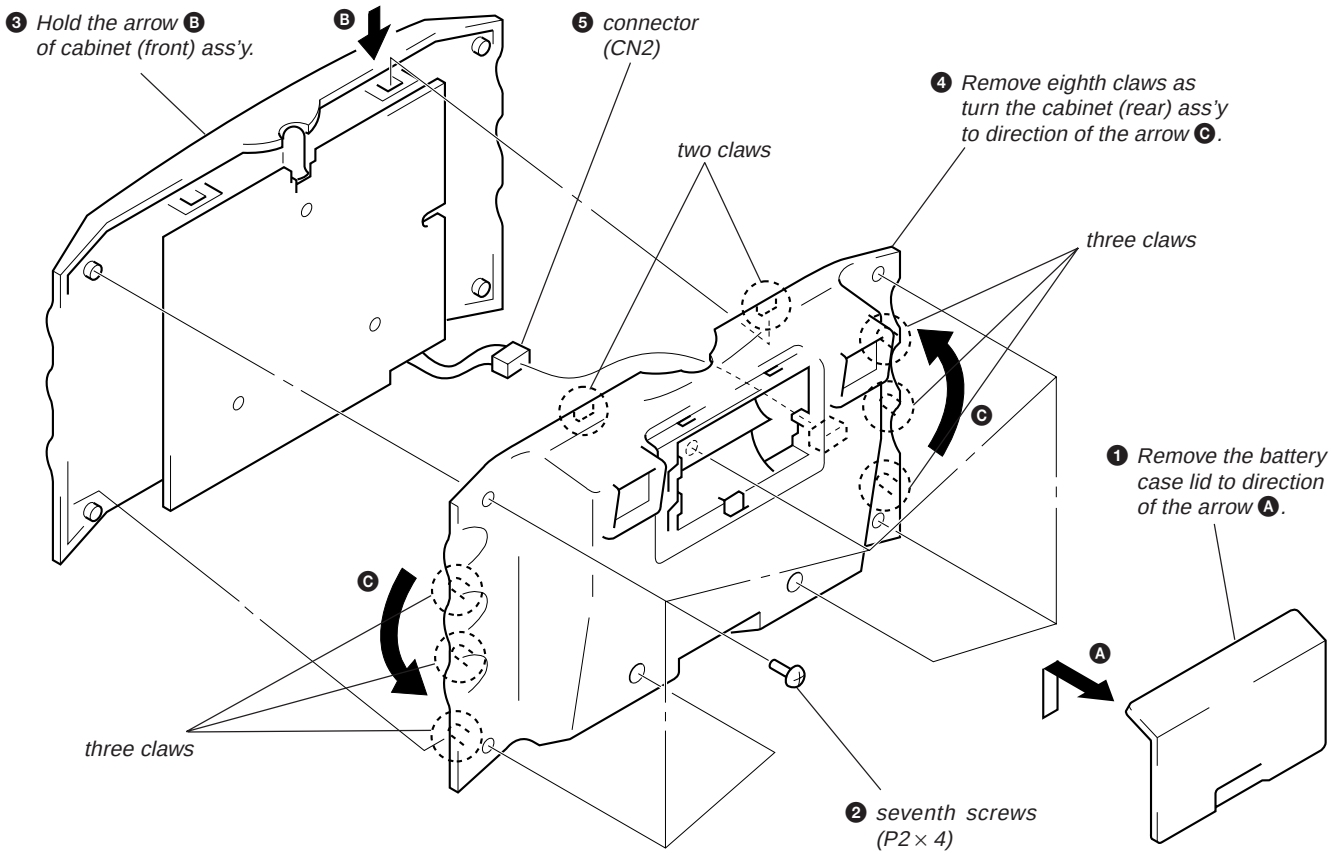

DETACHABLE CONTROLLER (RM-MD515) (Page 9)
CABINET (REAR) ASS'Y (DETACHABLE CONTROLLER) (Page 9)
CASE (Page10)
FRONT PANEL SECTION (Page 10)
MAIN BOARD, SUB BOARD (Page 11)
MD MECHANISM DECK SECTION (MDM-C1D) (Page 11)
AMP BOARD (Page 16)
HOLDER (FN), CHASSIS (TOP) (Page 12)
MD BASE UNIT (MBU-C1) (Page 14)
MOTOR (HEAD) ASS'Y (M905) (Page 13)
CD MECHANISM DECK SECTION (CDM48-5BD29) (Page 16)
CHASSIS (ELEVATOR) (NEW) ASS'Y (Page 13)
BD (MD) BOARD (Page 14)
STOCKER ASS'Y (Page 17)
CD BASE UNIT (BU-5BD29) (Page 18)
OVER WRITE HEAD (HR901) (Page 15)
TRAY (SUB) ASS'Y (Page 17)
BD (CD) BOARD (Page 19)
OPTICAL PICK-UP CLEANING (Page 18)
OPTICAL PICK-UP (KMS-260A/J1N) (for MD) (Page 15)
OPTICAL PICK-UP (KSS-213BA/F-NP) (for CD), SLED MOTOR (M102) (Page 19)
SPINDLE MOTOR (M101) (Page 20)

Note: Follow the disassembly procedure in the numerical order given.

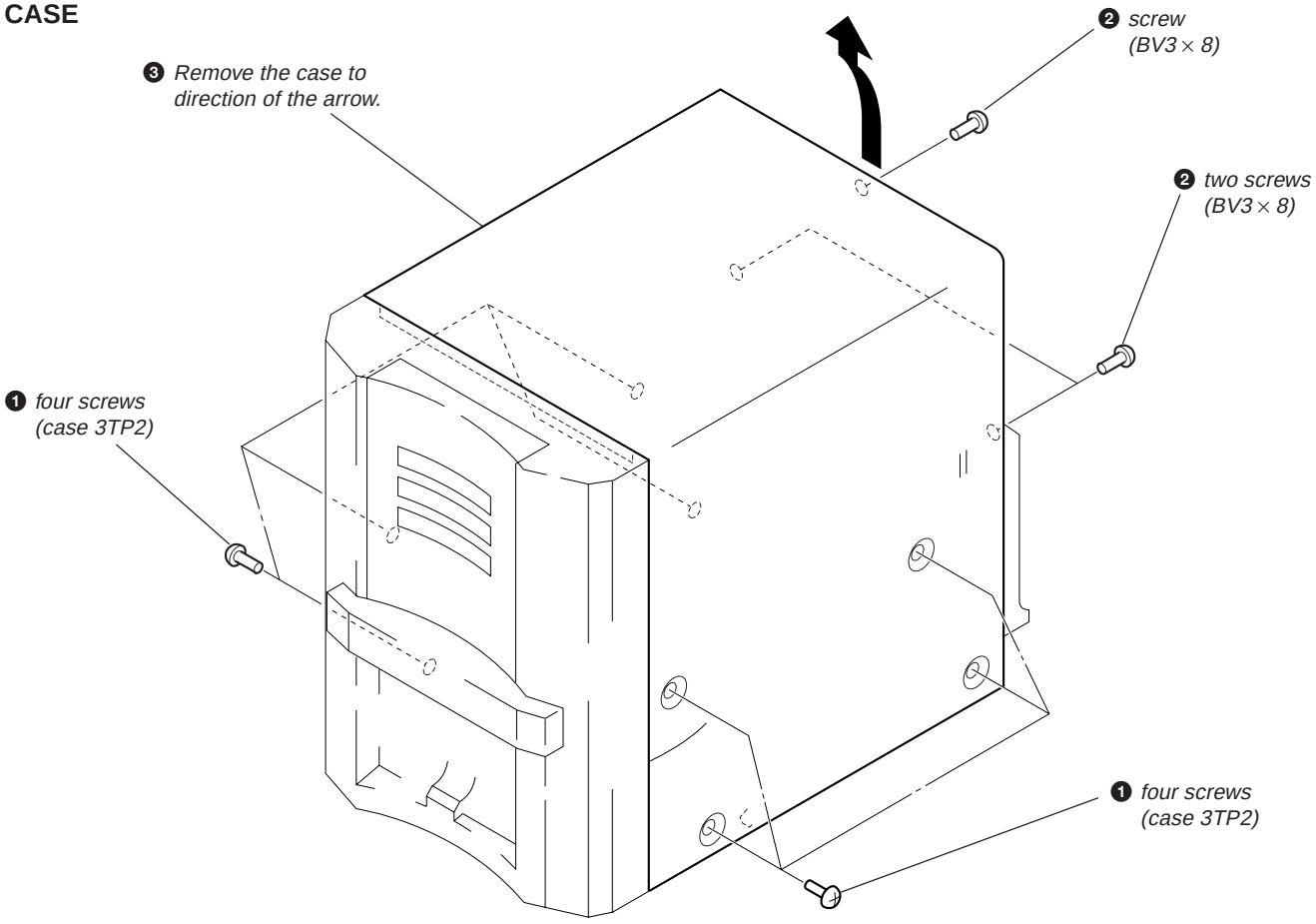
DETACHABLE CONTROLLER (RM-MD515)



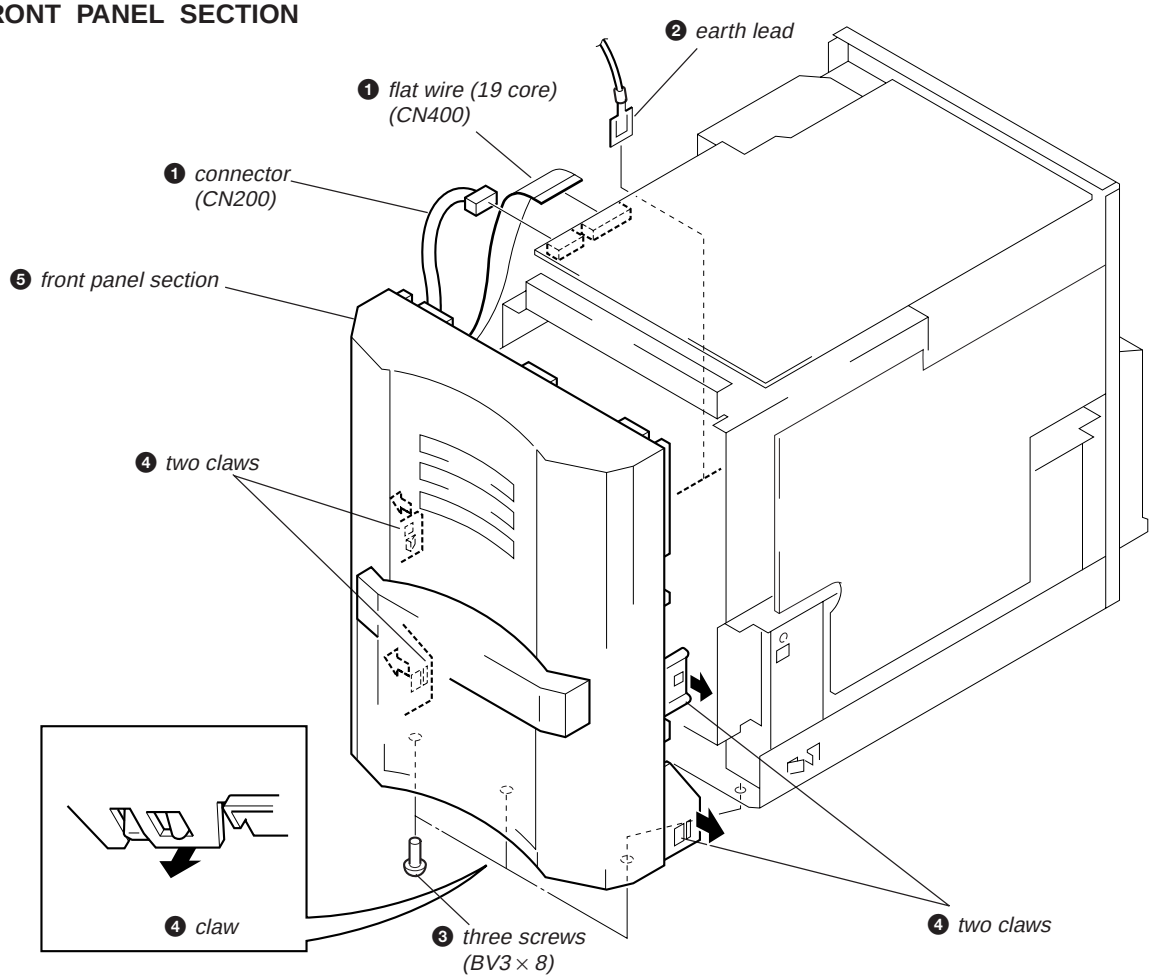
CABINET (REAR) ASS'Y (DETACHABLE CONTROLLER)


❸ Hold the arrow Ⓑ of cabinet (front) ass'y.
Ⓑ
❺ connector (CN2)
❹ Remove eighth claws as turn the cabinet (rear) ass'y to direction of the arrow Ⓒ.
two claws
three claws
Ⓒ
❶ Remove the battery case lid to direction of the arrow Ⓐ.
Ⓐ
Ⓒ
three claws
❷ seventh screws (P2 × 4)

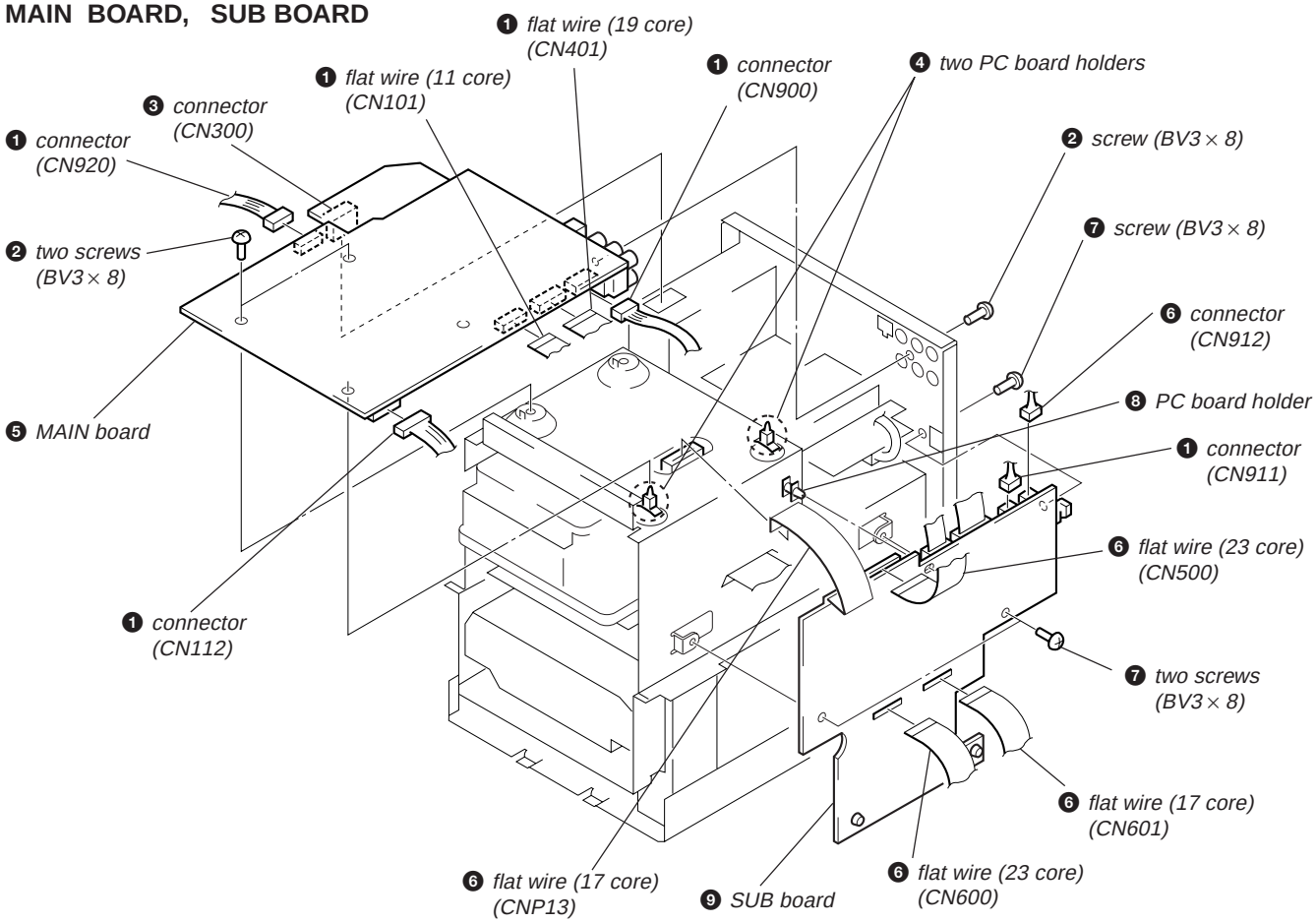
CASE



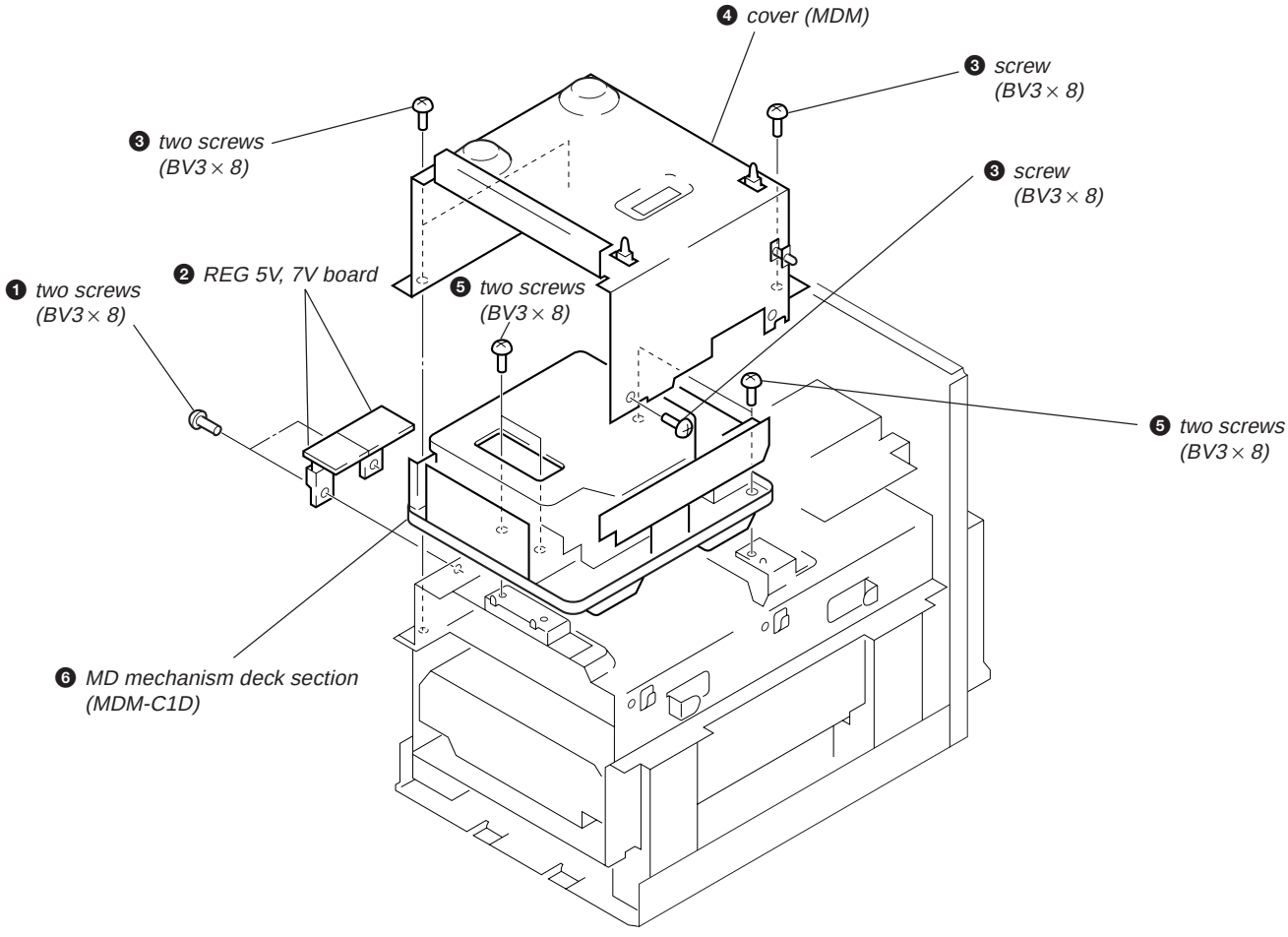
FRONT PANEL SECTION



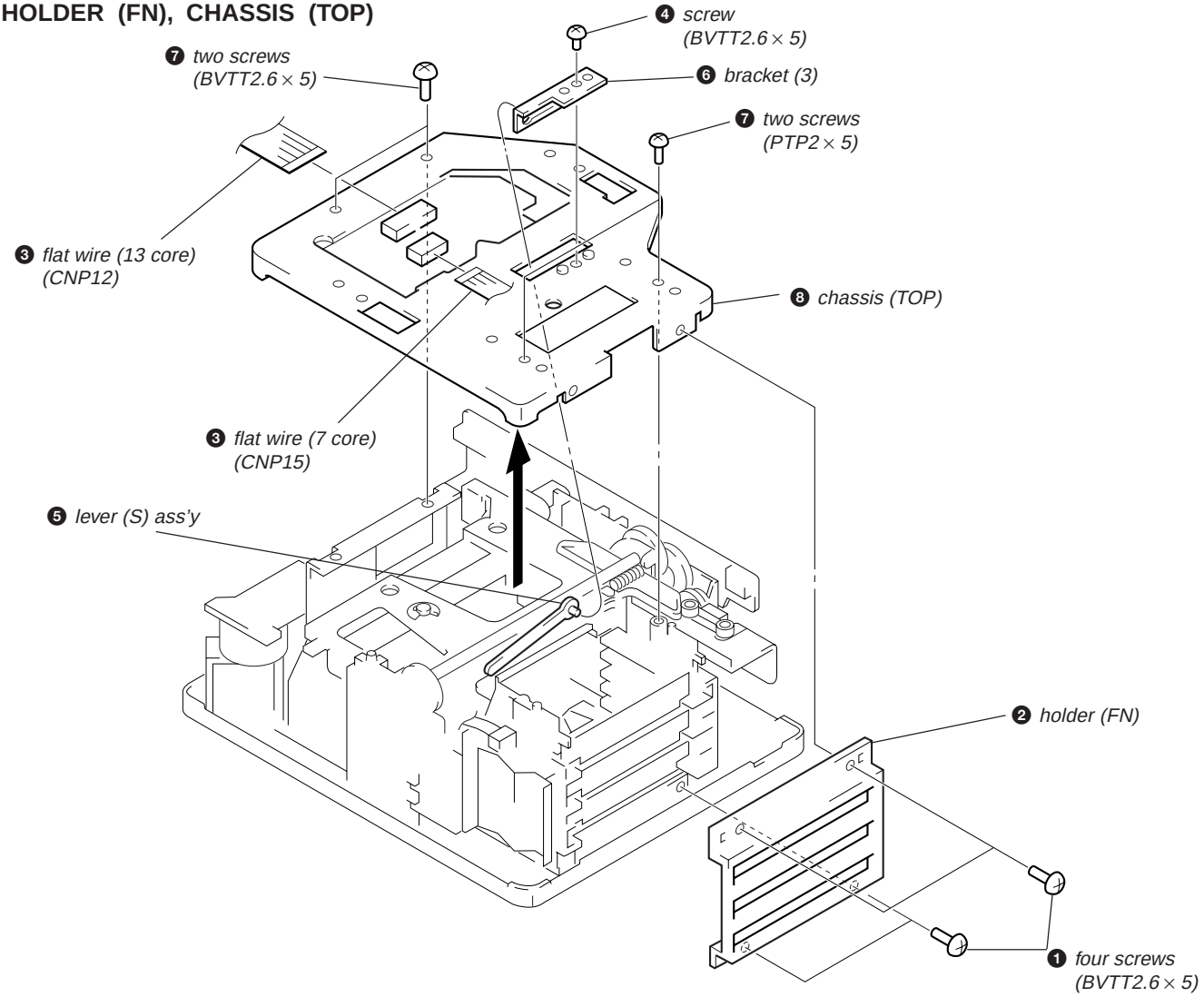
MAIN BOARD, SUB BOARD


❶ flat wire (19 core) (CN401)
❶ flat wire (11 core) (CN101)
❶ connector (CN900)
❹ two PC board holders
❸ connector (CN300)
❶ connector (CN920)
❷ screw (BV3 × 8)
❷ two screws (BV3 × 8)
❼ screw (BV3 × 8)
❻ connector (CN912)
❽ PC board holder
❺ MAIN board
❶ connector (CN911)
❻ flat wire (23 core) (CN500)
❶ connector (CN112)
❼ two screws (BV3 × 8)
❻ flat wire (17 core) (CN601)
❻ flat wire (17 core) (CNP13)
❾ SUB board
❻ flat wire (23 core) (CN600)

MD MECHANISM DECK SECTION (MDM-C1D)

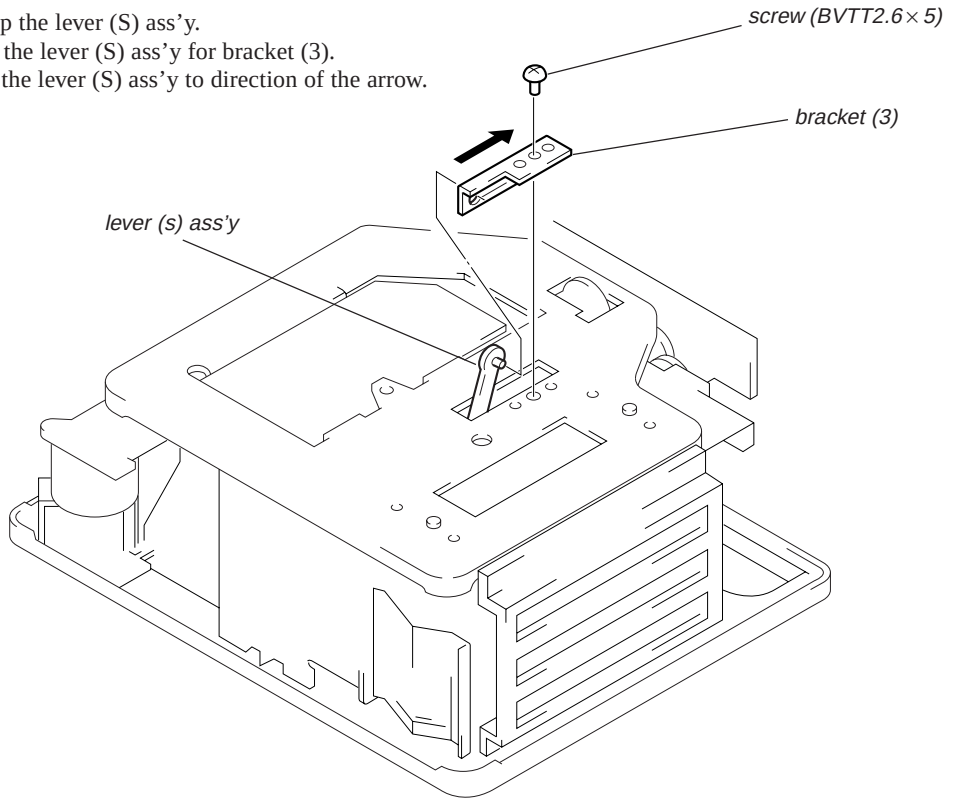

❹ cover (MDM)
❸ screw (BV3 × 8)
❸ two screws (BV3 × 8)
❸ screw (BV3 × 8)
❷ REG 5V, 7V board
❶ two screws (BV3 × 8)
❺ two screws (BV3 × 8)
❺ two screws (BV3 × 8)
❻ MD mechanism deck section (MDM-C1D)

HOLDER (FN), CHASSIS (TOP)

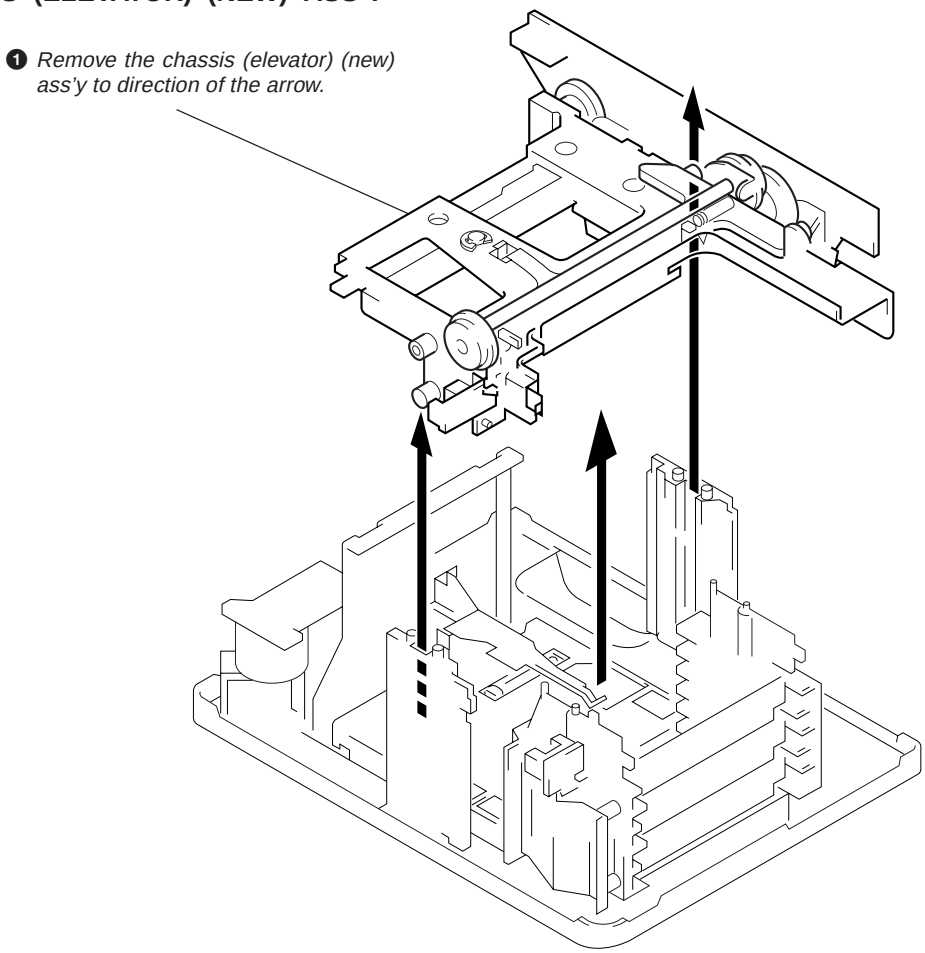

❹ screw (BVTT2.6 × 5)
❼ two screws (BVTT2.6 × 5)
❻ bracket (3)
❼ two screws (PTP2 × 5)
❸ flat wire (13 core) (CNP12)
❽ chassis (TOP)
❸ flat wire (7 core) (CNP15)
❺ lever (S) ass'y
❷ holder (FN)
❶ four screws (BVTT2.6 × 5)

NOTE FOR INSTALLATION OF BRACKET (3)

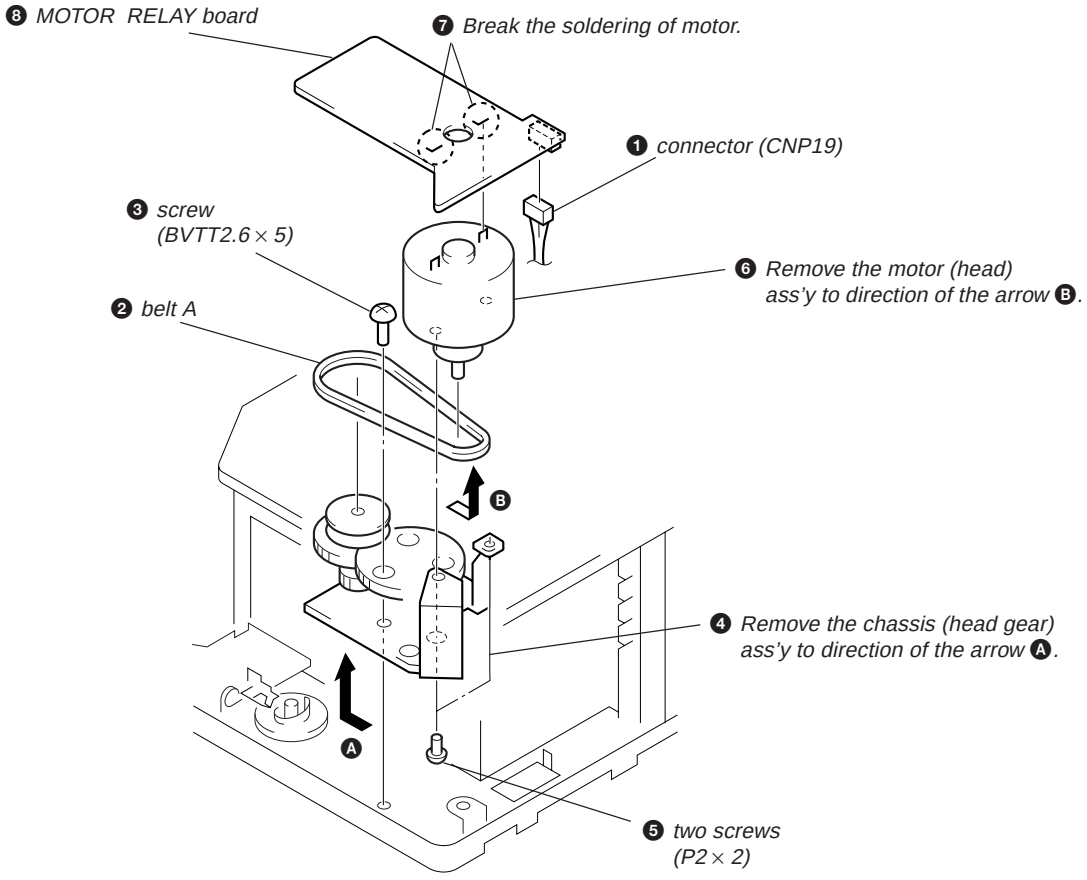
① Lift up the lever (S) ass'y.
② Hang the lever (S) ass'y for bracket (3).
③ Slide the lever (S) ass'y to direction of the arrow.



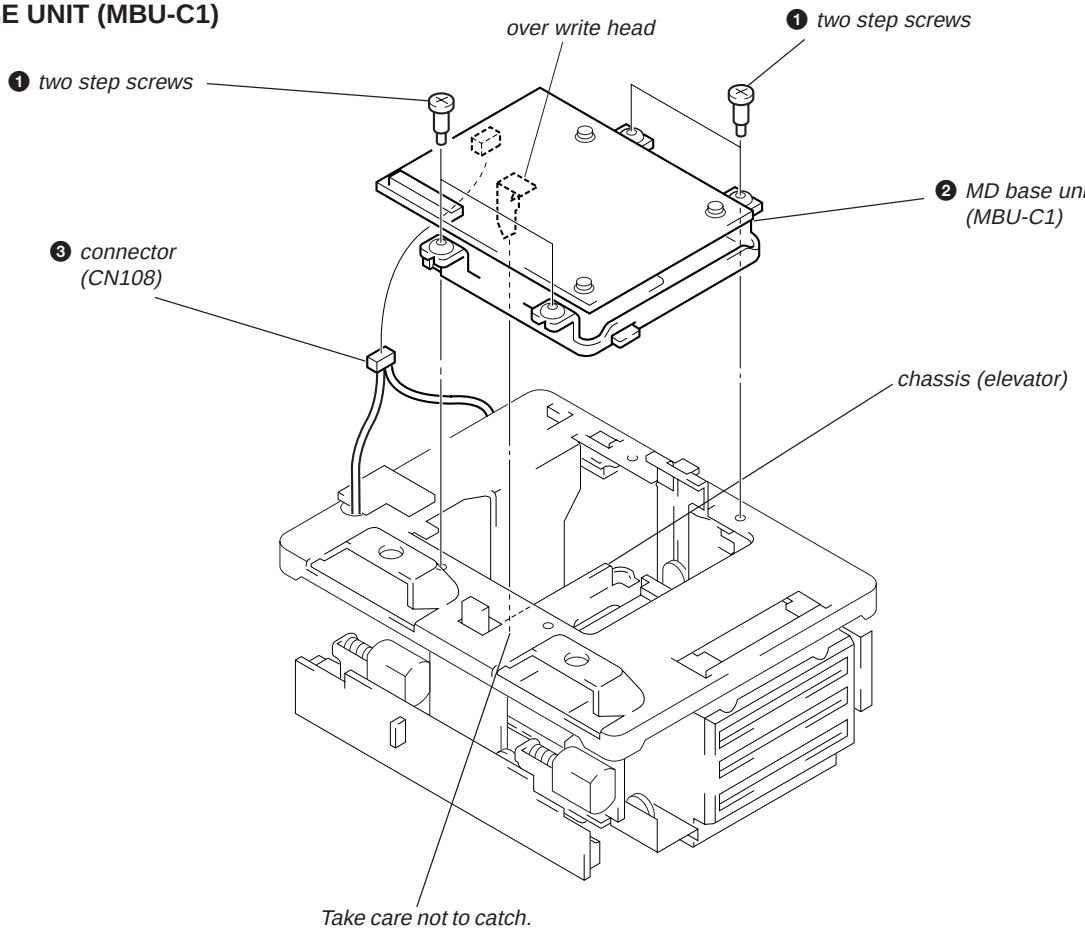
CHASSIS (ELEVATOR) (NEW) ASS'Y



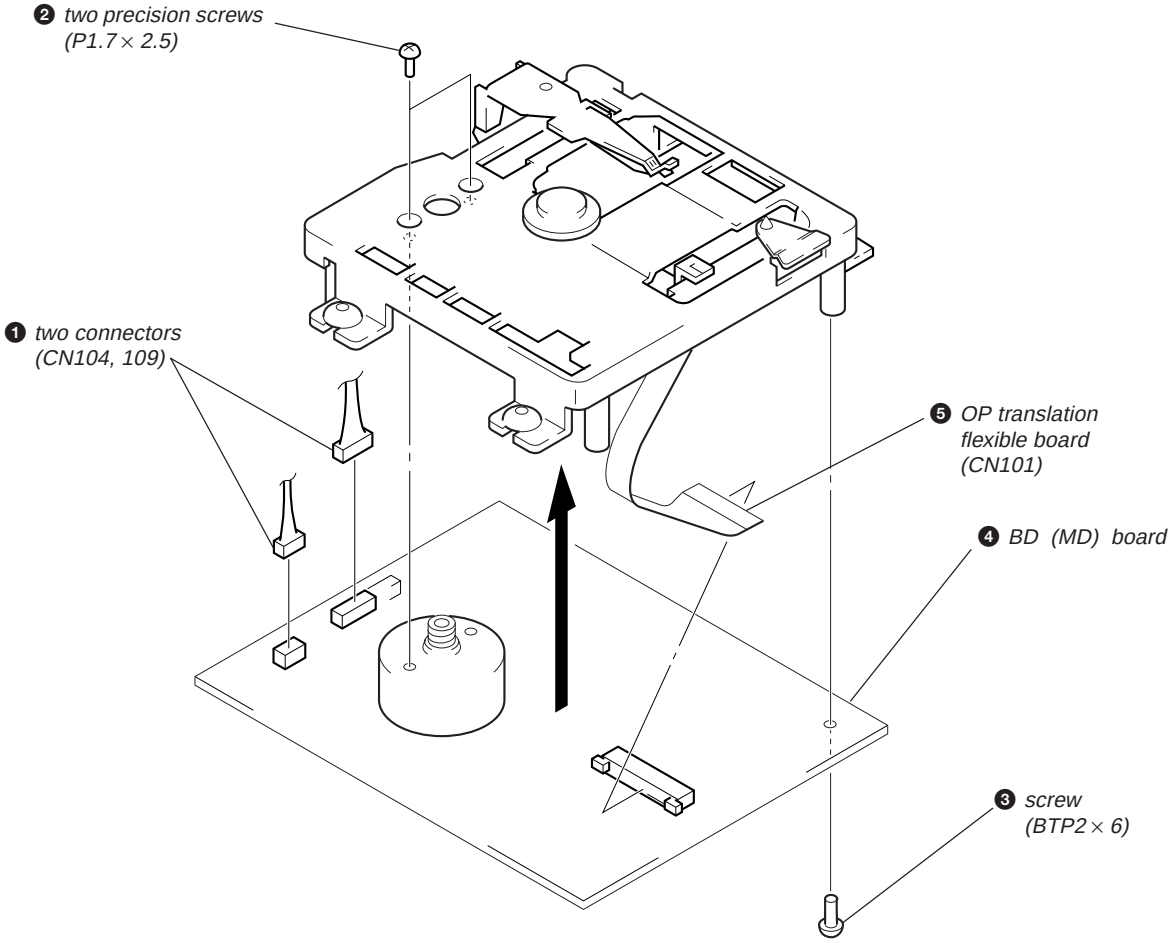
MOTOR (HEAD) ASS'Y (M905)


❽ MOTOR RELAY board
❼ Break the soldering of motor.
❶ connector (CNP19)
❸ screw (BVTT2.6 × 5)
❻ Remove the motor (head) ass'y to direction of the arrow Ⓑ.
❷ belt A
Ⓑ
❹ Remove the chassis (head gear) ass'y to direction of the arrow Ⓐ.
Ⓐ
❺ two screws (P2 × 2)

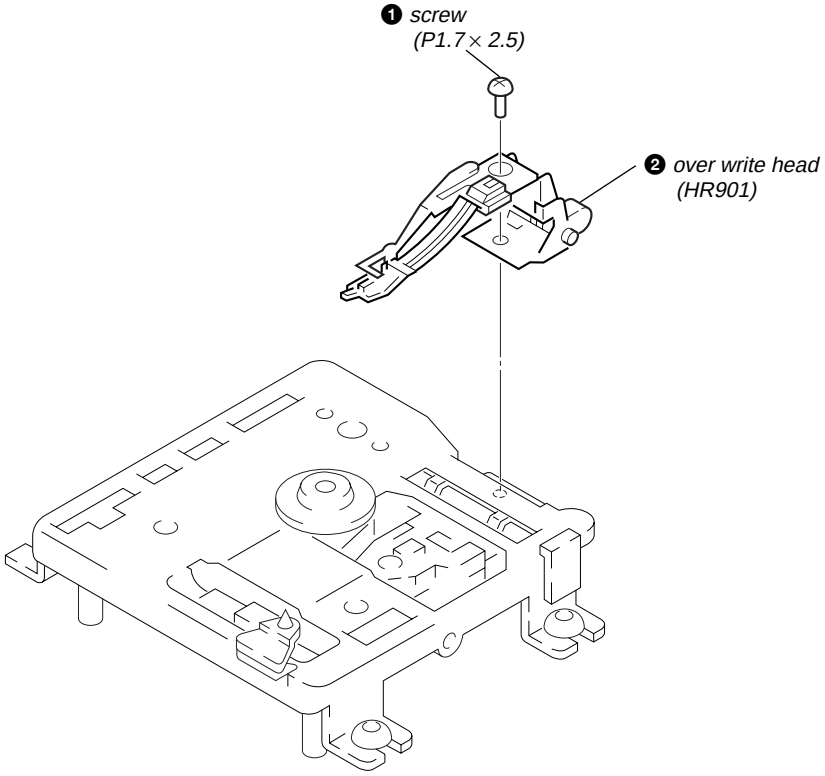
MD BASE UNIT (MBU-C1)



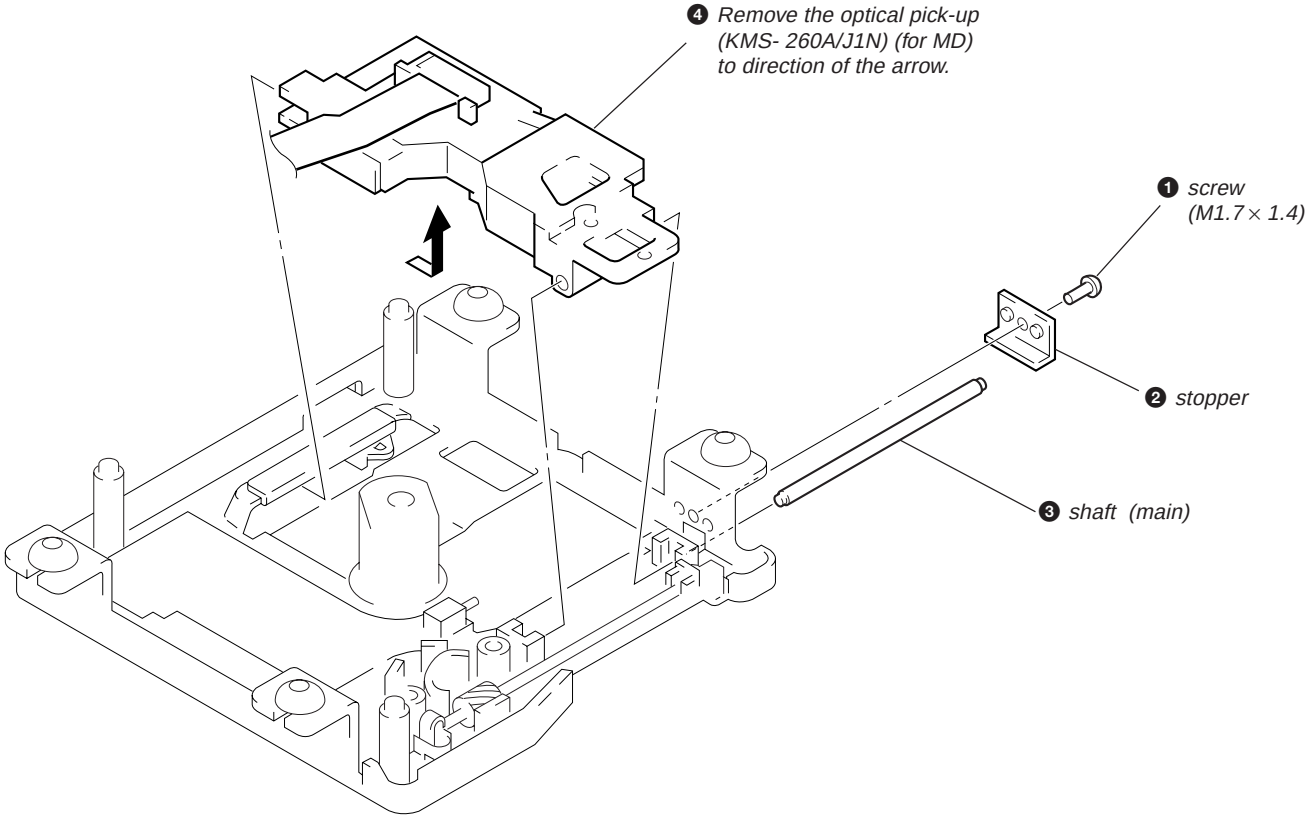
BD (MD) BOARD



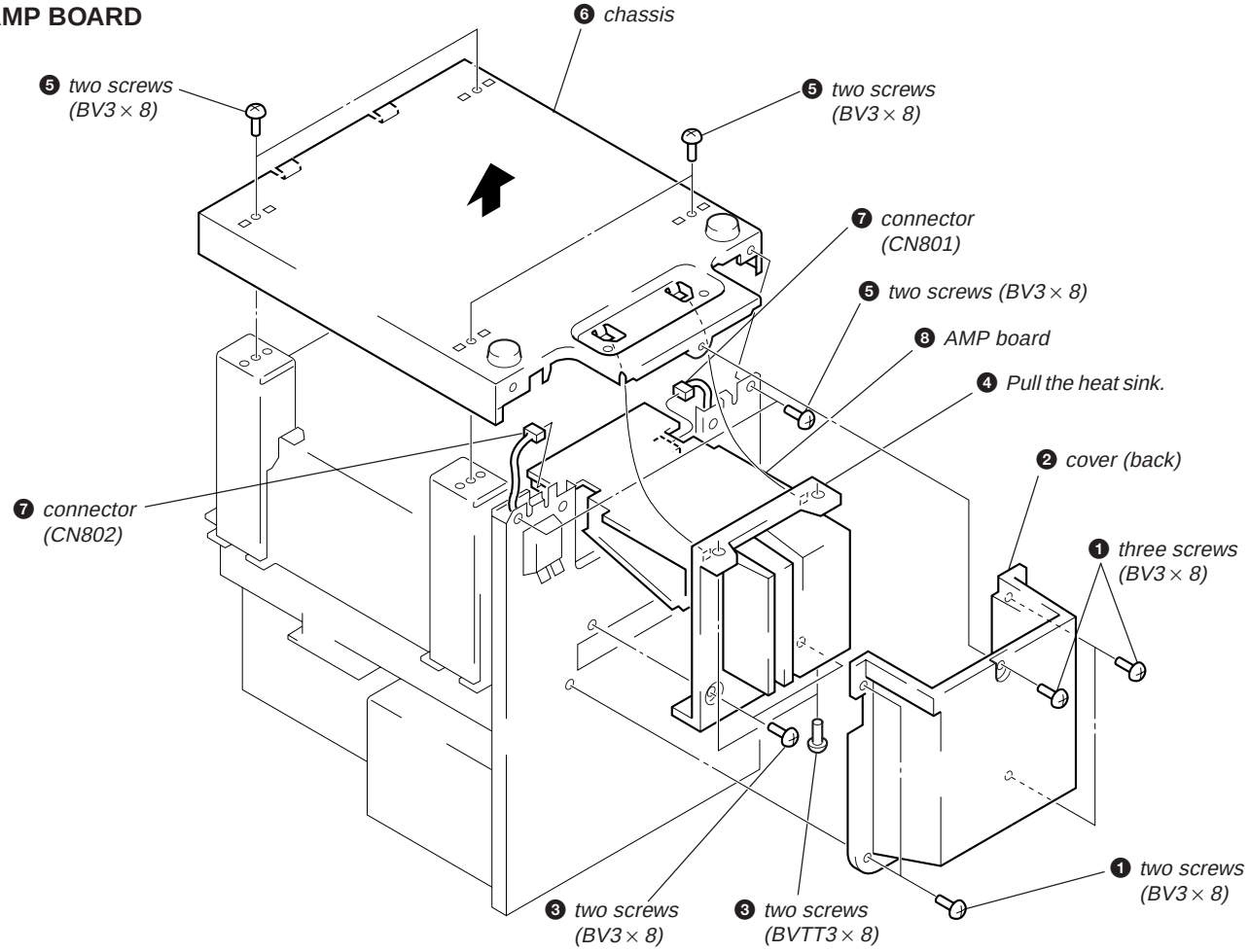
OVER WRITE HEAD (HR901)



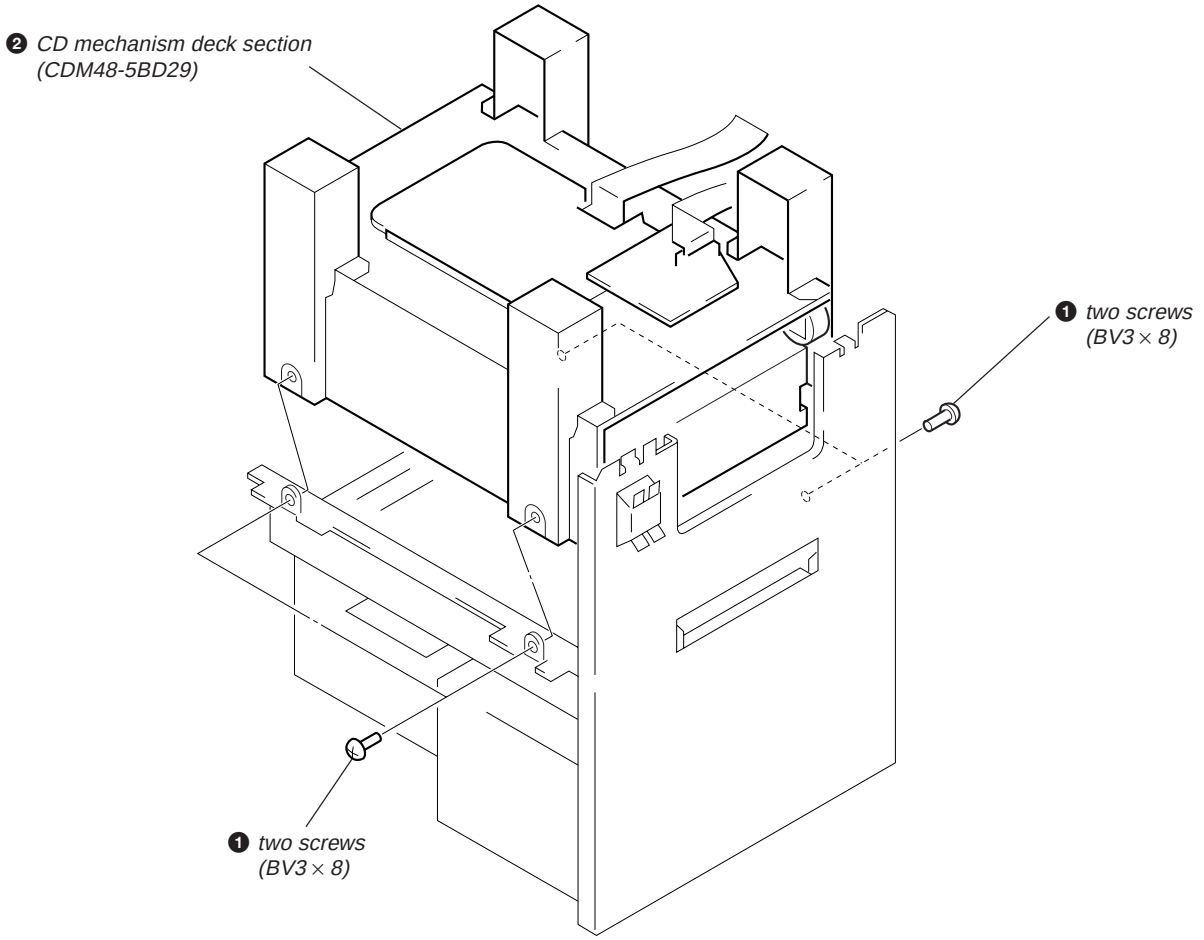
OPTICAL PICK-UP (KMS-260A/J1N) (for MD)



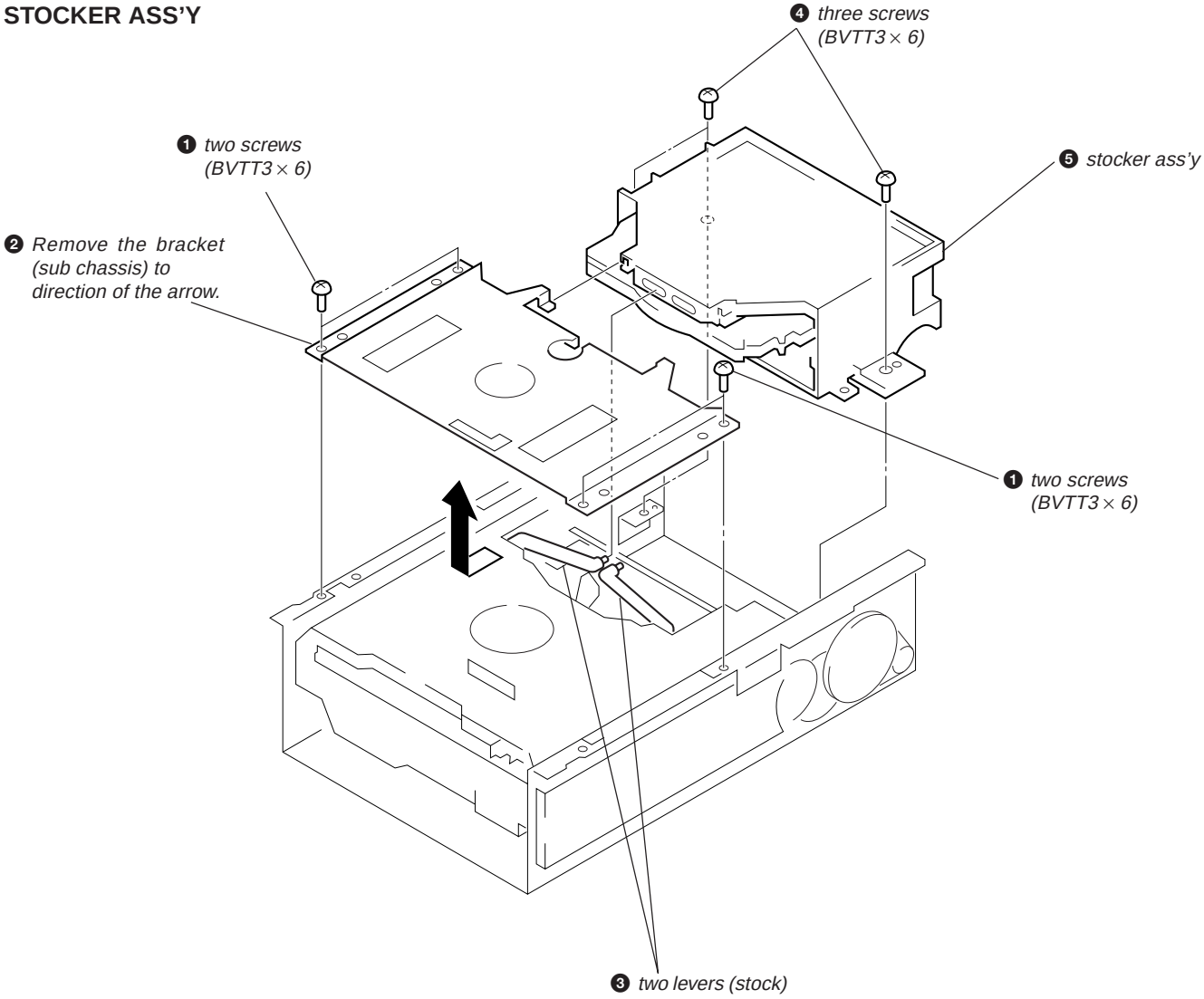
AMP BOARD


❻ chassis
❺ two screws (BV3 × 8)
❺ two screws (BV3 × 8)
❼ connector (CN801)
❺ two screws (BV3 × 8)
❽ AMP board
❹ Pull the heat sink.
❷ cover (back)
❼ connector (CN802)
❶ three screws (BV3 × 8)
❶ two screws (BV3 × 8)
❸ two screws (BV3 × 8)
❸ two screws (BVTT3 × 8)

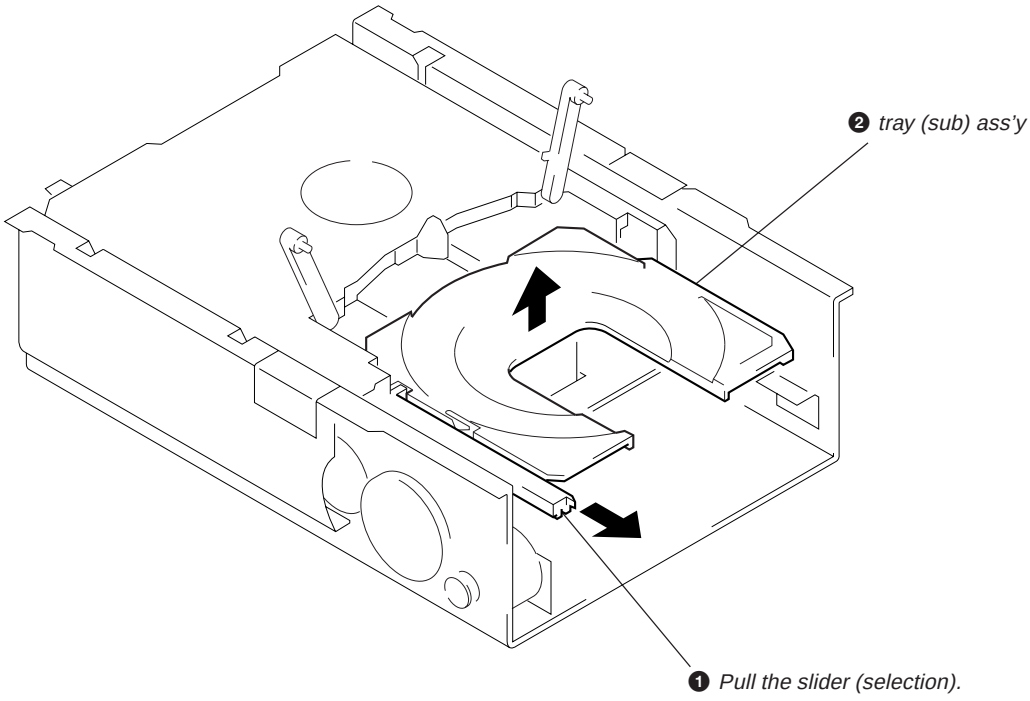
CD MECHANISM DECK SECTION (CDM48-5BD29)



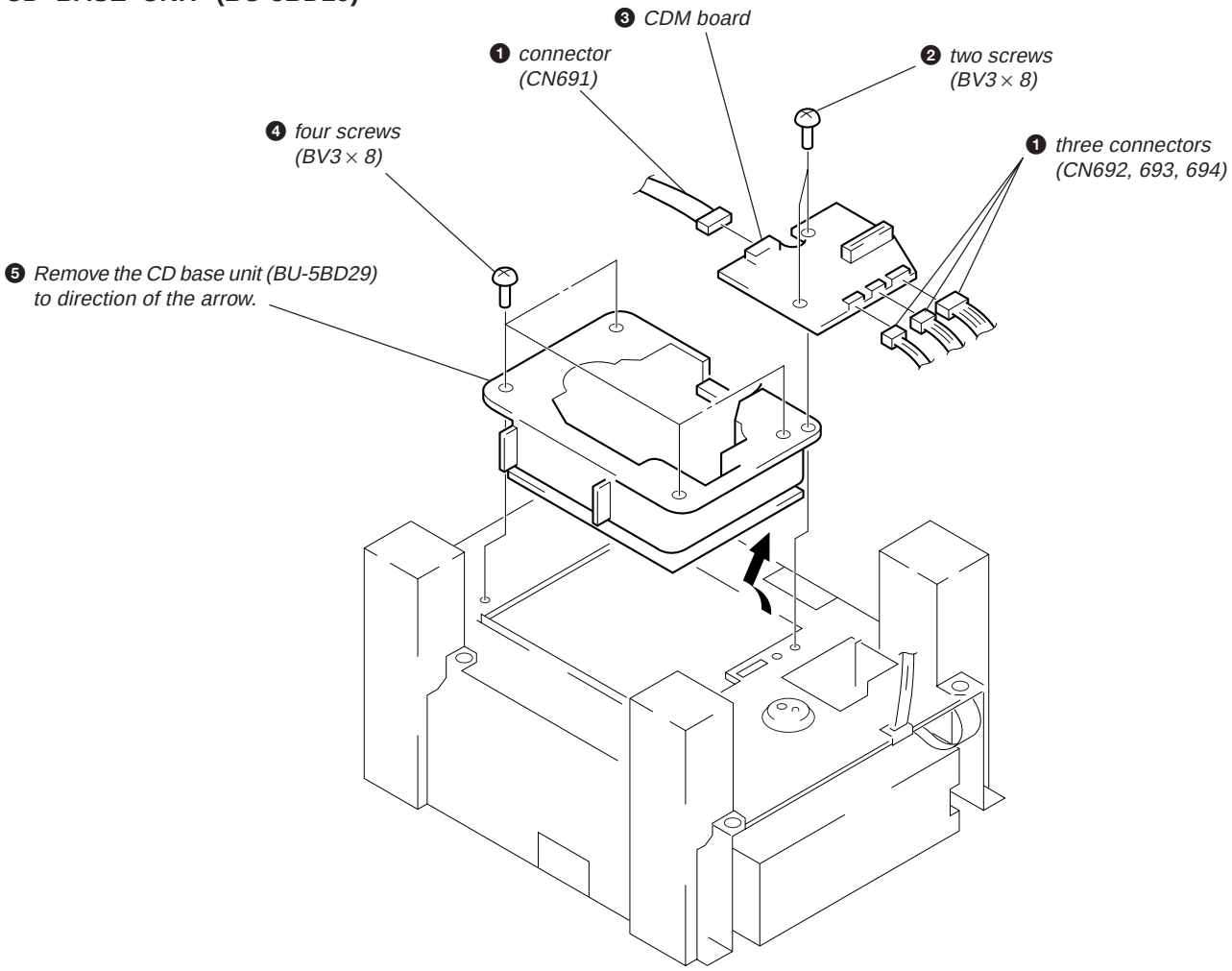
STOCKER ASS'Y


❹ three screws (BVTT3 × 6)
❶ two screws (BVTT3 × 6)
❺ stocker ass'y
❷ Remove the bracket (sub chassis) to direction of the arrow.
❶ two screws (BVTT3 × 6)
❸ two levers (stock)

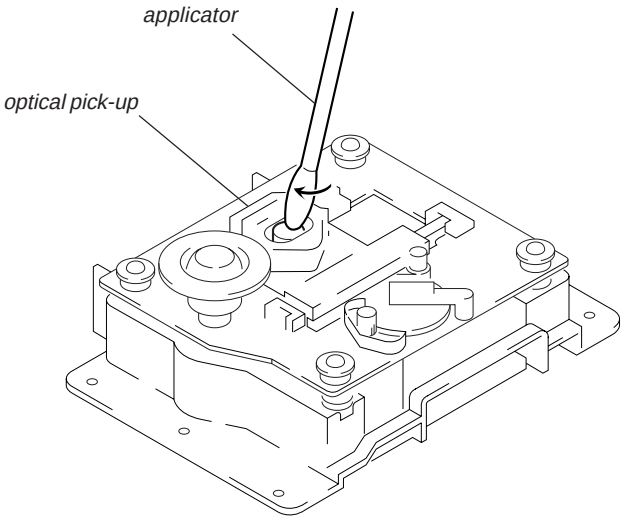
TRAY (SUB) ASS'Y



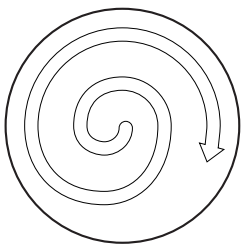
CD BASE UNIT (BU-5BD29)


❸ CDM board
❶ connector (CN691)
❷ two screws (BV3 × 8)
❹ four screws (BV3 × 8)
❶ three connectors (CN692, 693, 694)
❺ Remove the CD base unit (BU-5BD29) to direction of the arrow.

OPTICAL PICK-UP CLEANING

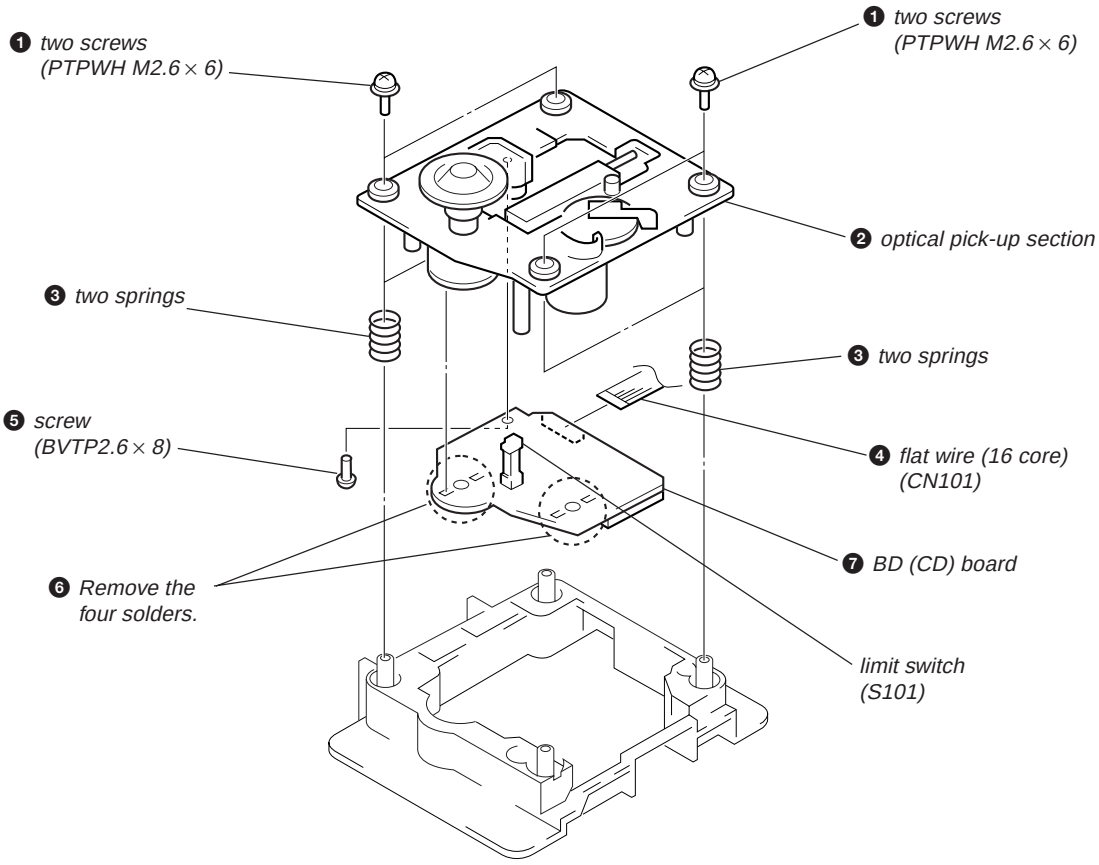


Note 1: In cleaning the lens, do not apply an excessive force. As the optical pick-up is vulnerable, application of excessive force could damage the lens holder.
Note 2: In cleaning, do not use a cleaner other than exclusive cleaning liquid (KK-91 or isopropyl alcohol).
Note 3: Wipe the objective lens spirally from center toward outside. (See Figure A)

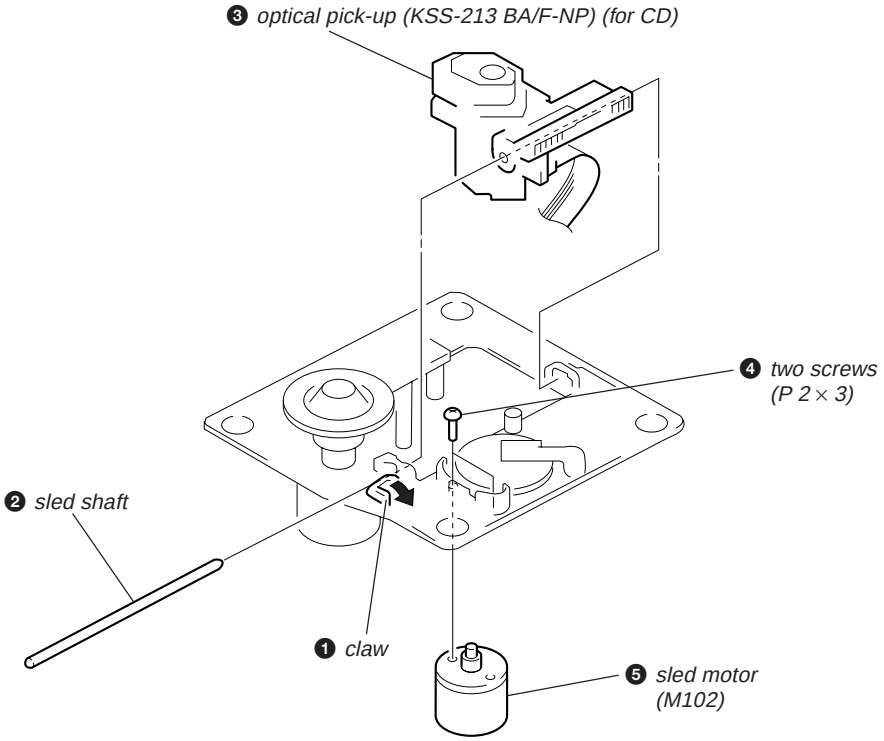


(Figure A)

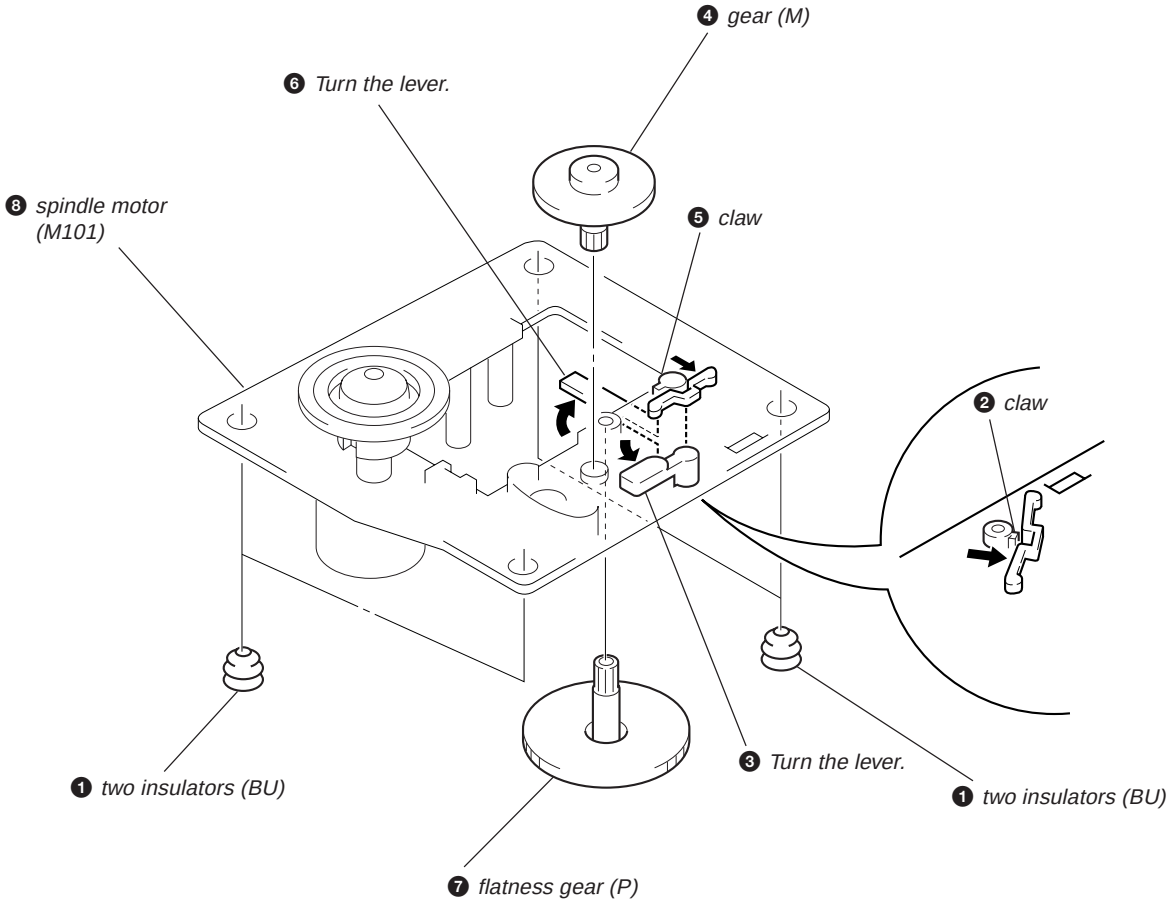
BD (CD) BOARD



OPTICAL PICK-UP (KSS-213BA/F-NP) (for CD), SLED MOTOR (M102)



SPINDLE MOTOR (M101)



SECTION 4
TEST MODE

4-1. PRECAUTIONS FOR USE OF TEST MODE

1. The erasing-protection tab is not detected in the test mode. Therefore, operating in the recording laser emission mode and pressing the REC/CD-MD SYNC button, the recorded contents will be erased regardless of the position of the tab. When using a disc that is not to be erased in the test mode, be careful not to enter the continuous recording mode and traverse adjustment mode.
   But "CREC MODE", "EF MO CHECK" and "EF MO ADJUST" is detect the erasing-protection tab and recording laser power off.
2. Using MD slot is "DISC 1" only.

4-1-1. Recording Laser Emission Mode and Operating Button

1. Continuous recording mode (CREC MODE)
2. Traverse adjustment mode (EF MO ADJUST)
3. Laser power adjustment mode (LDPWR ADJUST)
4. Laser power check mode (LDPWR CHECK)
5. When pressing the REC/CD-MD SYNC button.
6. Traverse checking mode (EF MO CHECK)

4-2. SETTING THE TEST MODE

1. Turn on the set, and select the MD function.
2. Place the MD in "NO DISC" status (No disc present in stocker and inside of set)
3. Press DBFB button, DIMMER button, and MD⏏ button simultaneously to activate the Test mode.
   When the Test mode is activated. "TEMP ADJUST" is displayed on fluorescent indicator tube.

4-3. LOADING/UNLOADING A DISC IN TEST MODE

1. In the Test mode, use the slot 1 only. (Do not load a disc in other slots.)
2. When a disc is loaded in slot 1, in several seconds it will be automatically pulled in.
3. To unload a disc, press MD⏏ button .
4. To load a disc again, press MD⏏ button .
5. In the Test mode, MD1, 2, 3 LEDs do not light regardless of whether a disc is present or not.

4-4. RELEASING THE TEST MODE

Press the REPEAT button, and the set returns to normal mode. (If REPEAT button is pressed with a disc loaded, the disc is automatically ejected.)

4-5. BASIC OPERATIONS OF THE TEST MODE

All operations are performed using the MULTI JOG dial, ENTER/YES button, and EDIT/NO button. The functions of these buttons and dial are as follows.

Table 1.

Button & dial	Function
MULTI JOG dial	Changes parameters and modes.
ENTER/YES button	Proceeds onto the next step. Finalizes input.
EDIT/NO button	Returns to previous step. Stops operations.

4-6. SELECTING THE TEST MODE

Twenty six test modes are selected by turn the MULTI JOG dial.

Table 2.

Display	Contents
TEMP CHECK	Temperature compensation offset check
LDPWR CHECK	Laser power check
EF MO CHECK	Traverse (E-F balance) check
EF CD CHECK	Travers (Pre mastered disk) check
FBIAS CHECK	Focus bias check
CPLAY MODE	Continuous playback mode
CREC MODE	Continuous recording mode
Scurve CHECK	S-curve check (*1)
VERIFY MODE	Non-volatile memory check (*1)
DETRK CHECK	Detrack check
TEMP ADJUST	Temperature compensation offset adjustment
LDPWR ADJUST	Laser power adjustment
EF MO ADJUST	Traverse (E-F balance) adjustment
EF CD ADJUST	Traverse (Pre mastered disk) adjustment
FBIAS ADJUST	Focus bias adjustment
EEP MODE	Non-volatile memory mode (*1)
MANUAL CMD	Manual command transfer mode (*1)
SVDATA READ	Data reading out mode (*1)
ERR DP MODE	Operation of error histories memory
SLED MOVE	Operation of sled motor (*1)
ACCESS MODE	Access check (*1)
0920 CHECK	Outermost periphery check (*1)
WRITE sure?	Non-volatile memory initialize (*1)
HEAD ADJUST	HEAD adjustment check (*1)
CPLAY2MODE	Continuous playback mode (*1)
CREC2MODE	Continuous recording mode (*1)

- For detailed description of each adjustment mode, refer to the "5. ELECTRICAL ADJUSTMENTS" (page 24).
- If a different adjustment mode has been selected by mistake, press the EDIT/NO button to exit from it.

*1: Scurve CHECK, VERIFY CHECK, EEP MODE, MANUAL CMD, SVDATA READ, SLED MOVE, ACCESS MODE, 0920 CHECK, Write sure?, HEAD ADJUST, CPLAY2MODE, and CREC2MODE are not used in servicing. If set accidentally, press the POWER button immediately to exit it.

4-7. OPERATING THE CONTINUOUS PLAYBACK MODE

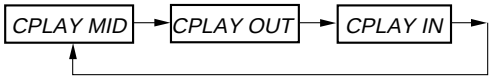
4-7-1. Entering the Continuous Playback Mode

1. Set the disc in the slot 1 of unit. (In several seconds it will be automatically pulled in.) (Whichever recordable discs or discs for playback only are available.)
2. Turn the MULTI JOG dial and display "CPLAY MODE".
3. Press the ENTER/YES button to change the display to "CPLAY MID".
4. When access completes, the display changes to "C = □□□□ AD= □□)".

Note: The numbers " □ " displayed show you error rates and ADER.

4-7-2. Changing the Parts to be Played-back

1. Press the ENTER/YES button during continuous playback to change the display as below.



2. When access completes, the display changes to "C1=□□□□ AD=□□ ".

Note: The numbers " □ " displayed show you error rates and ADER.

4-7-3. Ending the Continuous Playback Mode

1. Press the EDIT/NO button. The display will change to "CPLAY MODE".
2. Press the MD⏏ button and remove the disc.

Notes:

1. The playback start address for IN, MID, and OUT are as follows.
   IN : 40h cluster
   MID : 300h cluster
   OUT : 700h cluster
   In case you want to display the address of the playback position on the display, press the DISPLAY button and display "CPLAY (□□□□)".
2. The EDIT/NO button can be used to stop playing anytime.

4-8. OPERATING THE CONTINUOUS RECORDING MODE

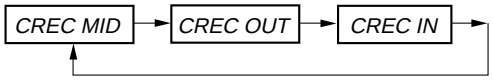
4-8-1. Entering the Continuous Recording Mode

1. Set the MO disc in the slot 1 of unit. (Refer to note 3.)
2. Turn the MULTI JOG dial and display "CREC MODE".
3. Press the ENTER/YES button to change the display to "CREC MID".
4. When access completes, the display changes to "CREC (□□□□)" and REC lights up.

Note: The numbers " □ " displayed shows you the recording position address.

4-8-2. Changing the Parts to be Recorded

1. When the ENTER/YES button is pressed during continuous recording, the display changes as below. ("PROGRAM" indication turns off during change-over of display.)



2. When access completes, the display changes to "CREC (□□□□)" and REC lights up.

Note: The numbers " □ " displayed shows you the recording position address.

4-8-3. Ending the Continuous Recording Mode

1. Press the EDIT/NO button. The display will change to "CREC MODE" and REC goes off.
2. Press the MD ⏏ button and remove the disc.

Notes:

1. The recording start address for IN, MID, and OUT are as follows.
   IN : 40h cluster
   MID : 300h cluster
   OUT : 700h cluster
2. The EDIT/NO button can be used to stop recording anytime.
3. During the test mode, the erasing-protection tab will not be detected. Therefore be careful not to set the continuous recording mode when a disc not to be erased is set in the unit.
4. Do not perform continuous recording for long periods of time above 5 minutes.
5. During continuous recording, be careful not to apply vibration.

4-9. EEP MODE

This mode reads and writes the contents of the non-volatile memory.
It is not used in servicing. If set accidentally, press the EDIT/NO button immediately to exit it.

4-10. FUNCTIONS OF OTHER BUTTONS

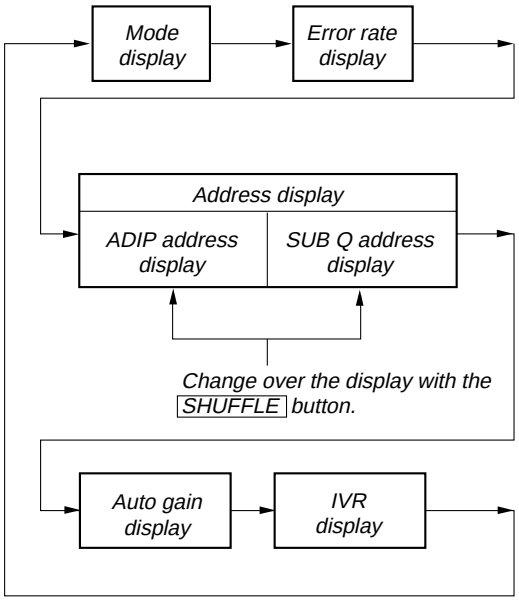
Table 3.

Button	Contents
▷II	Sets continuous playback when pressed in the STOP state. (servo all on) When pressed during continuous playback, the tracking and sled servo turns on/off.
■	Stop continuous playback and continuous recording. (servo all off)
►►	The sled moves to the outer circumference only when this is pressed.
◄◄	The sled moves to the inner circumference only when this is pressed.
REC/CD-MD SYNC	Turns recording on/off when pressed during continuous playback.
SHUFFLE	Switches between the pit and groove modes when pressed.
CONTINUE	Switches between the CLV-S (pull-in mode) and CLV-A (playing servo) modes when pressed. (Switches the spindle servo mode.)
DISPLAY	Switches the display when pressed. Returns to previous step. Stop operations.
REPEAT	Releasing the test mode
⏏	Disc eject

Note: The erasing-protection tab in not detected during the test mode. Recording will start regardless of the position of the erasing-protection tab when the REC/CD-MD SYNC button is pressed.

4-11. TEST MODE DISPLAYS

Each time the DISPLAY button pressed, the display changes in the following order.



Note: Auto gain display and IVR display are not used in servicing.

1. MODE display
   Displays “TEMP ADJUST”, “CPLAY MODE”, etc..

2. Error rate display
   Error rates are displayed as follows.
   C1= □□□□ AD= □□
   C1= : Indicates C1 error
   AD= : Indicates ADER

3. Address display
   Address are displayed as follows.
   h= □□□□ a= □□□□ (MO groove)
   With this display, if SHUFFLE button is pressed, the following will be displayed.
   h= □□□□ s= □□□□ (MO pit and CD)
   h=: Header address
   a=: ADIP address
   s=: SUB Q address

Note: “—” is displayed when the address cannot be read.

4. Auto gain display
   Auto gain are displayed as follows.
   AG = □□ / □□ [□□]
   A B C
   A= Focus servo gain coefficient
   B= Tracking servo gain coefficient
   C= [OK] or [NG] or [- -] (not converged)

4-12. MEANINGS OF OTHER DISPLAYS

Table 4.

Display	Contents		
	Light	Off	Blinking
►	During continuous playback (servo all on)	Stop state (servo all off)	—
REC	Recording mode on	Recording mode off	—
ALL DISCS	CLV lock state	CLV unlock state	—
TRACK	Pit mode	Groove mode	—
DISC	High reflection rate disc	Low reflection rate disc	—
REPEAT	Spindle servo CLV-S (pull-in mode)	Spindle servo CLV-A (playing mode)	—
LEVEL-SYNC	ABCD adjustment completed	Not adjustment	—
SHUFFLE	Focus auto gain successful	—	Focus auto gain successful.
PROGRAM	Tracking auto gain successful	—	Tracking auto gain failed.

SECTION 5
ELECTRICAL ADJUSTMENTS

MD SECTION

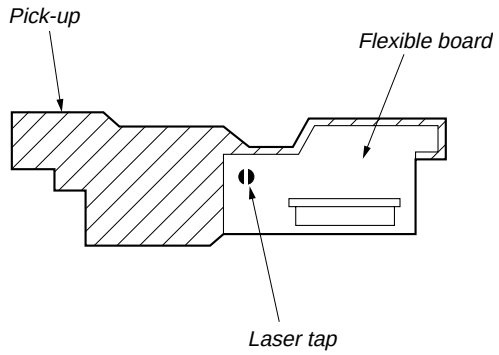
1. PRECAUTIONS FOR CHECKING LASER DIODE EMISSION

To check the emission of the laser diode during adjustments, never view directly from the top as this may lose your eyesight.

2. PRECAUTIONS FOR USE OF OPTICAL PICK-UP (KMS-260A)

As the laser diode in the optical pick-up is easily damaged by static electricity, solder the laser tap of the flexible board when using it.

Before disconnecting the connector, desolder first. Before connecting the connector, be careful not to remove the solder. Also tale adequate measures to prevent damage by static electricity. Handle the flexible board with care as it breaks easily.



Optical pick-up flexible board

3. PRECAUTIONS FOR ADJUSTMENTS

1) When replacing the following parts, perform the adjustments and checks with ○ in the order shown in the following table.

Table 1.

	Optical Pick-up	BD (MD) board		
		IC171	D101	IC101, IC121, IC192
1. Temperature compensation offset adjustment	×	○	○	○
2. Laser power adjustment	○	○	×	○
3. Traverse adjustment	○	○	×	○
4. Focus bias adjustment	○	○	×	○
5. Error rate check	○	○	×	○

2) Set the test mode when performing adjustments.
   After completing the adjustments, exit the test mode.
3) Perform the adjustments in the order shown.
4) Use the following tools and measuring devices.
   - Test disc (CD for playback only) TDYS-1
     (Parts No. 4-963-646-01)
   - Laser power meter LPM-8001
     (Parts No. J-2501-046-A)
   - Oscilloscope (Measure after preforming CAL of prove.)
   - Digital voltmeter
   - Thermometer
5) When observing several signals on the oscilloscope, etc., make sure that VC and ground do not connect inside the oscilloscope.
   (VC and ground will become short-circuited)

4. CREATING MO CONTINUOUSLY RECORDED DISC

* This disc is used in focus bias adjustment and error rate check. The following describes how to create a MO continuous recording disc.

1. Insert a MO disc (blank disc) commercially available to MD slot 1.
2. Turn the [MULTI JOG] dial and display “CREC MODE”.
3. Press the [ENTER/YES] button and display “CREC MID”. “CREC (0300)” is displayed for a moment and recording starts.
4. Complete recording within 5 minutes.
5. Press the [EDIT/NO] button and stop recording.
6. Press the [MD⏏] button and remove the MO disc.

The above has been how to create a continuous recording data for the focus bias adjustment and error rate check.

Note: Be careful not to apply vibration during continuous recording.

5. TEMPERATURE COMPENSATION OFFSET ADJUSTMENT

Save the temperature data at that time in the non-volatile memory as 25°C reference data.

Notes:

1. Usually, do not perform this adjustment.
2. Perform this adjustment in an ambient temperature of 22 °C to 28 °C. Perform it immediately after the power is turned on when the internal temperature of the unit is the same as the ambient temperature of 22 °C to 28 °C.
3. When D101 has been replaced, perform this adjustment after the temperature of this part has become the ambient temperature.

Adjusting Method:

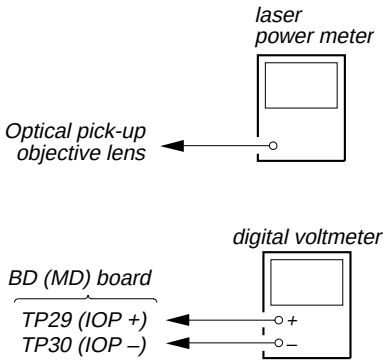
1. Turn the MULTI JOG dial and display "TEMP ADJUST".
2. Press the ENTER/YES button and select the "TEMP ADJUST" mode.
3. "TEMP = □□ " and the current temperature a data will be displayed.
4. To save the data, press the ENTER/YES button.
   When not saving the data, press the EDIT/NO button.
5. When the ENTER/YES button is pressed, "TEMP= □□ SAVE" will be displayed for some time, followed by "TEMP ADJUST".
   When the EDIT/NO button is pressed, "TEMP ADJUST" will be displayed immediately.

Specifications:

The temperature should be within "E0-EF", "F0-FF", "00-0F", "10-1F" and "20-2F".

6. LASER POWER ADJUSTMENT

Connection:



Adjusting Method:

1. Set the laser power meter on the objective lens of the optical pick-up. (When it cannot be set properly, press the ▶▶ button or ◀◀ button and move the optical pick-up.)
   Connect the digital voltmeter to CN110 pin ⑤ (I+3 V) and CN110 pin ④ (IOP) of the BD (MD) board.
2. Turn the MULTI JOG dial and display "LDPWR ADJUST". (Laser power: for adjustment)
3. Press the ENTER/YES button and display "LD 0.9 mW $ □□".
4. Turn the MULTI JOG dial so that the reading of the laser power meter becomes 0.82 to 0.93 mW.
   Set the range control on the laser power meter to 10 mW, then press the ENTER/YES button to save the adjustment result in the non- volatile memory.
   ("LD SAVE $ □□" will be displayed for a moment.)
5. Then "LD 7.0 mW $ □□ "will be displayed.
6. Turn the MULTI JOG dial so that the reading of the laser power meter becomes 6.9 to 7.1 mW, press the ENTER/YES button and save the adjustment result in the nonvolatile memory.
   ("LD SAVE $ □□" will be displayed for a moment.)

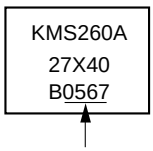
Note: Do not perform the emission with 7.0 mW more than 15 seconds continuously.

7. Turn the MULTI JOG dial and display "LDPWR CHECK".
8. Press the ENTER/YES button and display "LD 0.9 mW $ □□". Check that the reading of the laser power meter becomes 0.80 to 0.96 mW.
9. Press the ENTER/YES button and display "LD 7.0 mW $ □□". Check that the reading of the laser power meter and digital voltmeter satisfy the specified value.

Specification:

Laser power meter reading : 7.0 ± 0.2 mW
Digital voltmeter reading : Optical pick-up displayed value ±10%

(Optical pick-up label)



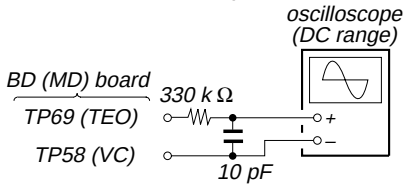
IOP=56.7 mA in this case
IOP (mA) = Digital voltmeter reading (mV)/1 (Ω)

10. Press the EDIT/NO button and display "LDPWR CHECK", and stop the laser emission.
    (The EDIT/NO button is effective at all times to stop the laser emission.)

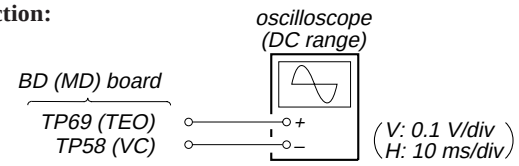
7. TRAVERSE (E-F BALANCE) ADJUSTMENT

Note 1: Data will be erased during MO reading if a recorded disc is used in this adjustment.

Note 2: If the traverse waveform is not clear, connect the oscilloscope as shown in the following figure so that it can be seen more clearly.



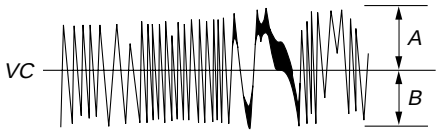
Connection:



Adjusting Method:

1. Connect an oscilloscope to TP69 (TEO) and TP58 (VC) of the BD (MD) board.
2. Load a MO disc (any available on the market) to MD slot 1. (Refer to note 1.)
3. Press the ▶▶ button and move the optical pick-up outside the pit.
4. Turn the MULTI JOG dial and display "EFBAL ADJUST".
5. Press the ENTER/YES button and display "EFB= ▯▯ MO-R".
   (Laser power READ power/Focus servo ON/tracking servo OFF/spindle (S) servo ON)
6. Turn the MULTI JOG dial so that the waveforms of the oscilloscope becomes the specified value. (When the MULTI JOG dial is turned , the "▯▯" of "EFB=▯▯ MO-R" changes and the waveform changes.)
   In this adjustment, waveform varies at intervals of approx. 2%. Adjust the waveform so that the specified value is satisfied as much as possible.
   (MO read power traverse adjustment)

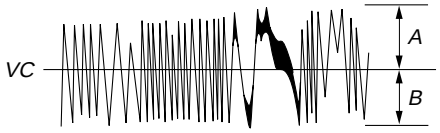
(Traverse Waveform)



specification: A=B

7. Press the ENTER/YES button, and save the result of adjustment to the non-volatile memory.
   ("EFB=▯▯ SAVE" will be displayed for a moment. Then "EFB=▯▯ MO-W" will be displayed.)
8. Turn the MULTI JOG dial so that the waveforms of the oscilloscope becomes the specified value. (When the MULTI JOG dial is turned, the "▯▯" of "EFB=▯▯ MO-W" changes and the waveform changes.)
   In this adjustment, waveform varies at intervals of approx. 2%. Adjust the waveform so that the specified value is satisfied as much as possible.
   (MO write power traverse adjustment)

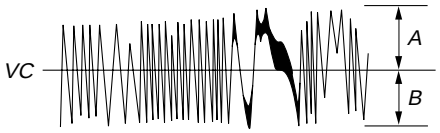
(Traverse Waveform)



specification: A=B

9. Press the ENTER/YES button, and save the result of adjustment to the non-volatile memory.
   ("EFB=▯▯ SAVE" will be displayed for a moment. Then "EFB=▯▯ MO-P" will be displayed.)
10. The optical pick-up moves to the pit area automatically and servo is imposed.
11. Turn the MULTI JOG dial until the waveforms of the oscilloscope moves closer to the specified value.
    In this adjustment, waveform varies at intervals of approx. 2%. Adjust the waveform so that the specified value is satisfied as much as possible.

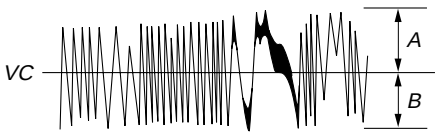
(Traverse Waveform)



specification: A=B

12. Press the ENTER/YES button, and save the result of adjustment to the non-volatile memory.
    ("EFB=▯▯ SAVE" will be displayed for a moment. Then "EF MO ADJUST" will be displayed.)
    The disc stops rotating automatically.
13. Press the MD⏏ button and remove the MO disc.
14. Set the test mode again and load the test disc TDYS-1 to MD slot 1.
15. Turn the MULTI JOG dial and display "EF CD ADJUST"
16. Press the ENTER/YES button and display "EFB=▯▯ CD". Servo is imposed automatically.
17. Turn the MULTI JOG dial until the waveforms of the oscilloscope moves closer to the specified value.
    In this adjustment, waveform varies at intervals of approx. 2%. Adjust the waveform so that the specified value is satisfied as much as possible.

(Traverse Waveform)



specification: A=B

18. Press the ENTER/YES button, and save the result of adjustment to the non-volatile memory.
    ("EFB=▯▯ SAVE" will be displayed for a moment. Then "EF CD ADJUST" will be displayed.)
19. Press the MD⏏ button and remove the test disc TDYS-1.

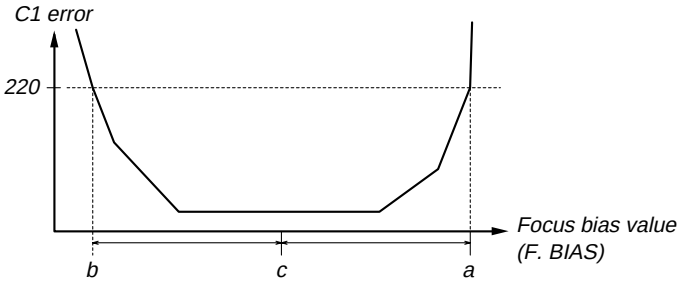
8. FOCUS BIAS ADJUSTMENT

Adjusting Method:

1. Load a continuously recorded disc (Refer to "4. Creating MO Continuously Recorded Disc".).
2. Turn the MULTI JOG dial and display "CPLAY MODE".
3. Press the ENTER/YES button and display "CPLAY MID".
4. Press the EDIT/NO button when "C1= □□□□ AD= □□ " is displayed.
5. Turn the MULTI JOG dial and display "FBIAS ADJUST".
6. Press the ENTER/YES button and display "□□□□/□□ a=□□". The first four digits indicate the C1 error rate, the two digits after [/] indicate ADER, and the 2 digits after [a=] indicate the focus bias value.
7. Turn right the MULTI JOG dial and find the focus bias value at which the C1 error rate becomes 220. (Refer to note 2.)
8. Press the ENTER/YES button and display "□□□□/□□ b=□□".
9. Turn left the MULTI JOG dial and find the focus bias value at which the C1 error rate becomes 220. (Refer to note 2.)
10. Press the ENTER/YES button and display "□□□□/□□ c=□□".
11. Check that the C1 error rate is below 50 and ADER is 00. Then press the ENTER/YES button.
12. If the "(□□)" in "□□-□□-□□ (□□)" is above 20, press the ENTER/YES button.
    If below 20, press the EDIT/NO button and repeat the adjustment from step 2 again.
13. Press the EDIT/NO button and press the MD⏏ button to remove the continuously recorded disc.

Note 1: The relation between the C1 error and focus bias is as shown in the following figure. Find points a and b in the following figure using the above adjustment. The focal point position c is automatically calculated from points a and b.

Note 2: As the C1 error rate changes, perform the adjustment using the average vale.



9. ERROR RATE CHECK

9-1. CD Error Rate Check

Checking Method:

1. Load a test disc TDYS-1.
2. Turn the MULTI JOG dial and display "CPLAY MODE".
3. Press the ENTER/YES button and display "CPLAY MID".
4. "C1= □□□□ AD= □□" is displayed.
5. Check that the C1 error is below 20.
6. Press the EDIT/NO button, stop playback, press the MD⏏ button, and remove the test disc.

9-2. MO Error Rate Check

Checking Method:

1. Load a continuously recorded disc (Refer to "5-4. Creating MO Continuously Recorded Disc".).
2. Turn the MULTI JOG dial and display "CPLAY MODE".
3. Press the ENTER/YES button and display "CPLAY MID".
4. "C1=□□□□ AD=□□" is displayed.
5. If the C1 error is below 50, check that ADER is 00.
6. Press the EDIT/NO button, stop playback, press the MD⏏ button, and remove the continuously recorded disc.

10. FOCUS BIAS CHECK

Change the focus bias and check the focus tolerance amount.

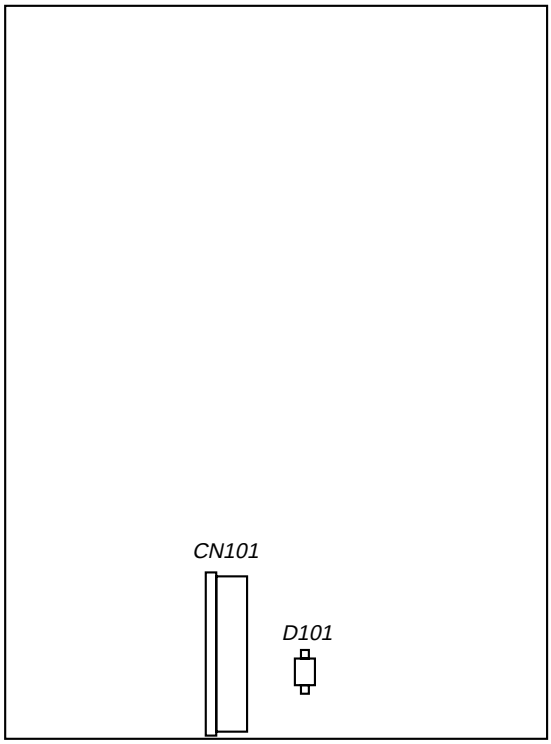
Checking Method:

1. Load a continuously recorded disc (Refer to "5-4. Creating MO Continuously Recorded Disc".).
2. Turn the MULTI JOG dial and display "CPLAY MODE".
3. Press the ENTER/YES button and display "CPLAY MID".
4. Press the EDIT/NO button when "C1=□□□□ AD=□□" is displayed.
5. Turn the MULTI JOG dial and display "FBIAS CHECK".
6. Press the ENTER/YES button and display "□□□□/□□ c=□□". The first four digits indicate the C1 error rate, the two digits after [/] indicate ADER, and the 2 digits after [c=] indicate the focus bias value.
   Check that the C1 error is below 50 and ADER is 00.
7. Press the ENTER/YES button and display "□□□□/□□ b=□□". Check that the C1 error is not below 100 and ADER is not above 02 every time.
8. Press the ENTER/YES button and display "□□□□/□□ a=□□". Check that the C1 error is not below 100 and ADER is not above 02 every time.
9. Press the EDIT/NO button, next press the MD⏏ button, and remove the continuously recorded disc.

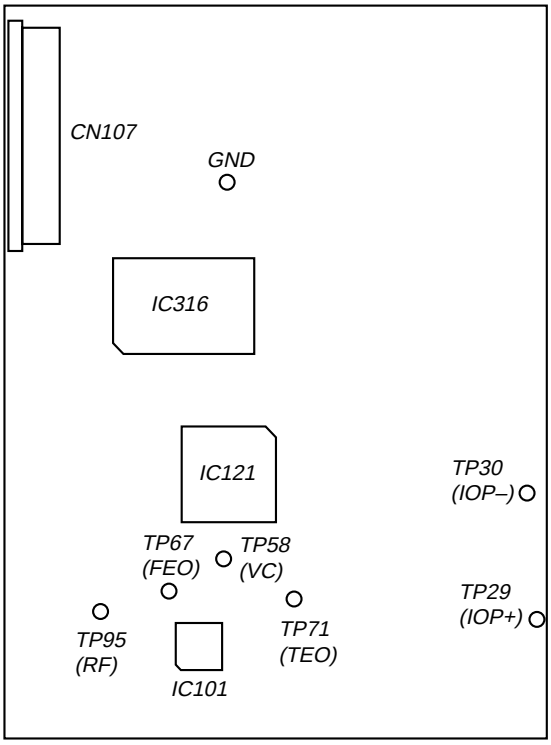
Note 1: If the C1 error and ADER are above 00 at points a or b, the focus bias adjustment may not have been carried out properly. Adjust perform the beginning again.

11. ADJUSTING POINTS AND CONNECTING POINTS

[BD (MD) BOARD] – SIDE A –



[BD (MD) BOARD] – SIDE B –

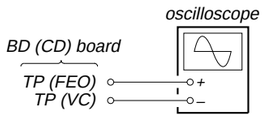


CD SECTION

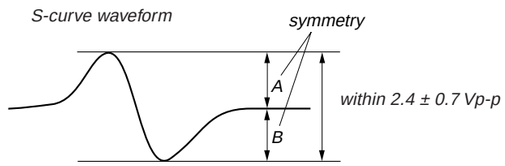
Notes:
1. CD Block basically constructed to operated without adjustment.
   Therefore, check eaech item in order given.
2. Use YEDS-18 disc (Part No.: 3-702-101-01) unless otherwise indicated.
3. Use the oscilloscope with more than 10 MΩ impedance.
4. Clean an object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.

1. S-Curve CHECK

Connection:



Procedure:
1. Connect the oscilloscope to TP (FEO) and TP (VC) on BD (CD) board.
2. Connect the TP (FOK) and TP (GND) with lead wire.
3. Turned power switch on.
4. Put disc (YEDS-18) in and turned power switch on again and actuate the focus search. (actuate the focus search when disc table is moving in and out.)
5. Confirm that the oscilloscope waveform (S-curve) is symmetrical between A and B. And confirm peak to peak level within 2.4 ± 0.7 Vp-p.

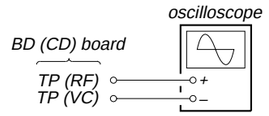


6. After check, remove the lead wire connected in step 2.

Note: • Try to measure several times to make sure that the ratio of A : B or B : A is more than 10 : 7.
• Take sweep time as long as possible and light up the brightness to obtain best waveform.

2. RF LEVEL CHECK

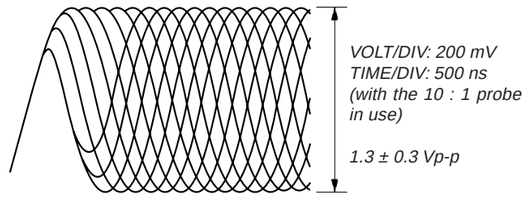
Connection:



Procedure:
1. Connect the oscilloscope to TP (RF) and TP (VC) on BD (CD) board.
2. Turned power switch on. (stop mode)
3. Put disc (YEDS-18) in and press the ▶II button.
4. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

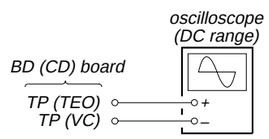
Note: Clear RF signal waveform means that the shape "◇" can be clearly distinguished at the center of the waveform.

RF signal waveform



3. E-F BALANCE (TRAVERSE) CHECK

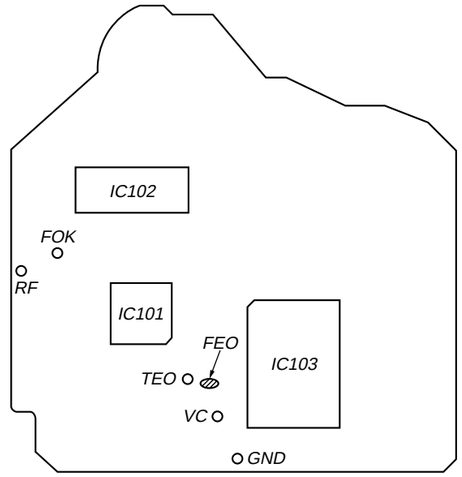
Connection:



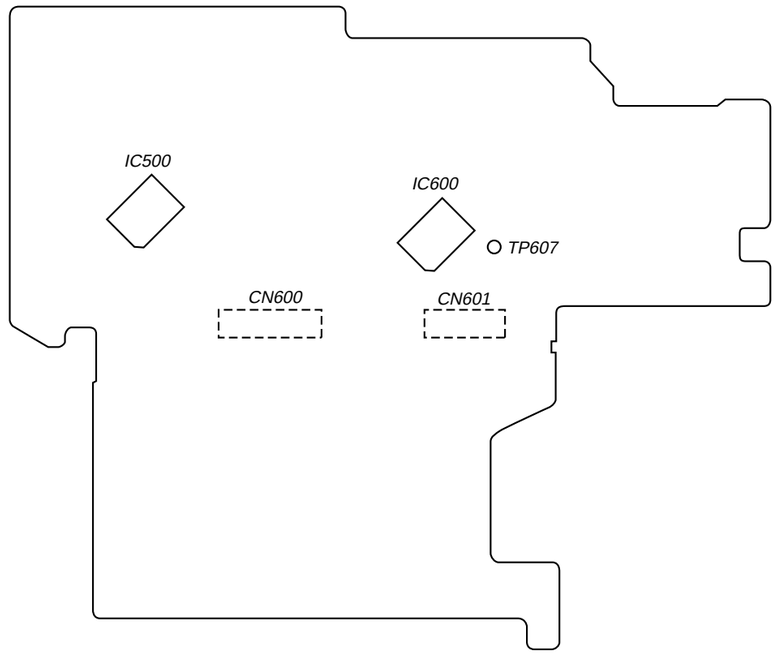
Procedure:
1. Connect the lead wire to TP607. (on the SUB board)
2. Connect the oscilloscope to TP (TEO) and TP (VC) on BD (CD) board.
3. Turned power switch on.
4. Select the CD function.
5. Connect the lead wire to ground (from TP607)
6. Put disc (YEDS-18) in and press the ▶II button.
7. Press the DISPLAY button. (Tracking servo and sled servo are turned off.)
8. Confirm that the oscilloscope waveform is symmetrical on the top and bottom in relation to 0 Vdc, and check this level.
9. Release the lead wire.

4. CONNECTING POINTS

[BD (CD) BOARD] – Side B –



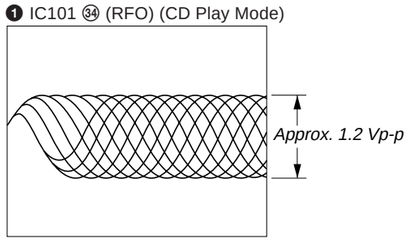
[SUB BOARD] – Conductor Side –



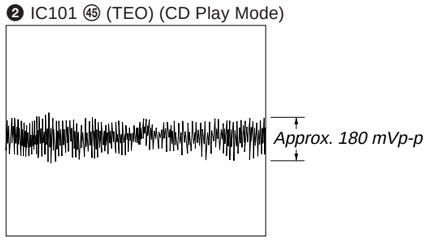
• Waveforms

– BD (CD) BOARD –

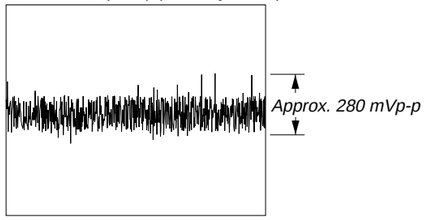
❶ IC101 ㉞ (RFO) (CD Play Mode)



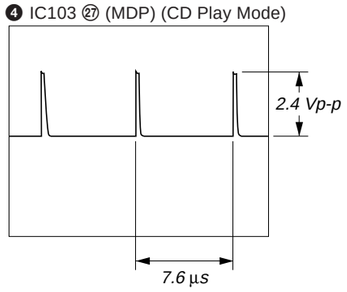
❷ IC101 ㊺ (TEO) (CD Play Mode)



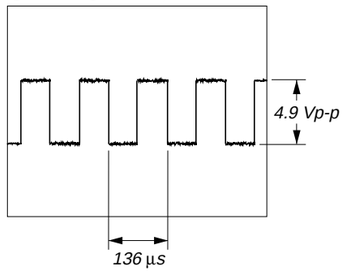
❸ IC101 ① (FEO) (CD Play Mode)



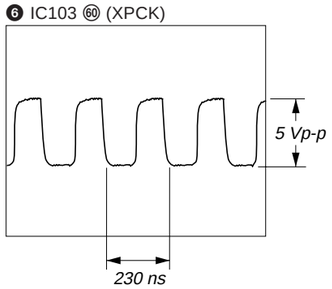
❹ IC103 ㉗ (MDP) (CD Play Mode)



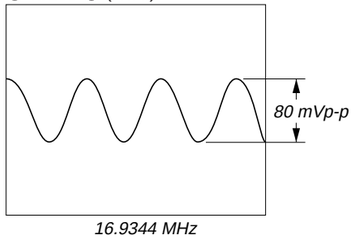
❺ IC103 ㉜ (RFCK)



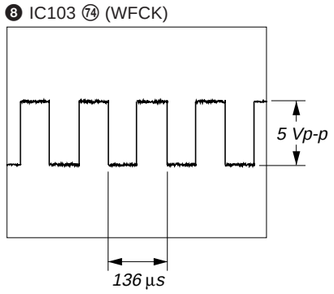
❻ IC103 ㊵ (XPCK)



❼ IC103 ㊾ (XTAI)

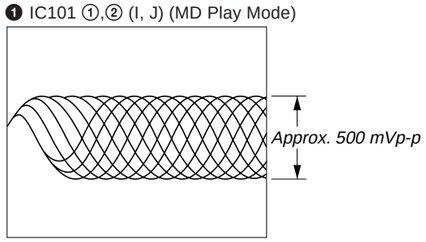


❽ IC103 ㉞ (WFCK)

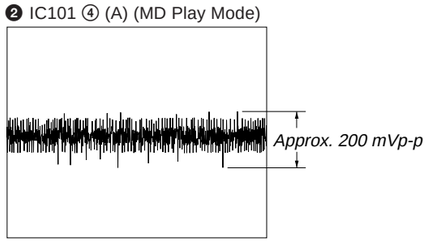


– BD (MD) BOARD –

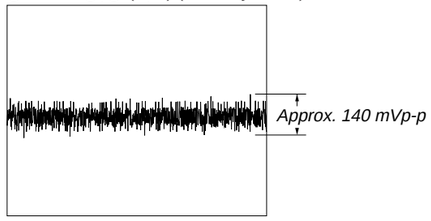
❶ IC101 ①,② (I, J) (MD Play Mode)



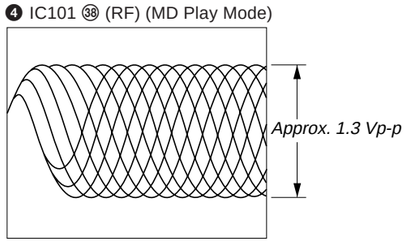
❷ IC101 ④ (A) (MD Play Mode)



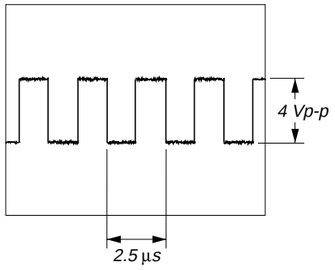
❸ IC101 ⑧,⑨ (E, F) (MD Play Mode)



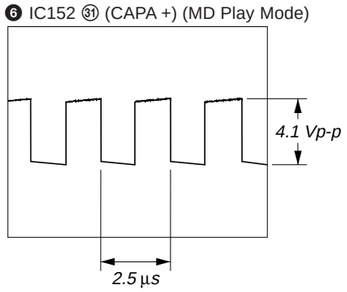
❹ IC101 ㊳ (RF) (MD Play Mode)



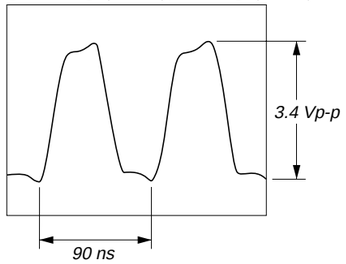
❺ IC152 ㉜ (CAPA –) (MD Play Mode)



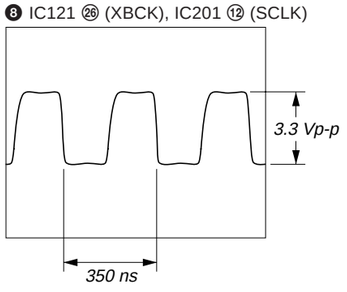
❻ IC152 ㉛ (CAPA +) (MD Play Mode)



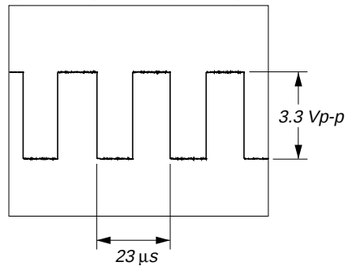
❼ IC121 ㉗ (FS256), IC201 ⑮ (MCLK)



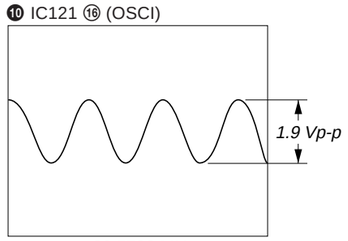
❽ IC121 ㉖ (XBCK), IC201 ⑫ (SCLK)



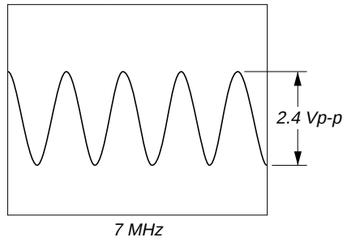
❾ IC121 ㉕ (LRCK), IC201 ⑪ (LRCK)



❿ IC121 ⑯ (OSCI)

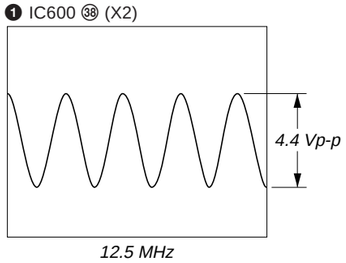


⓫ IC316 ⑮ (XIN)

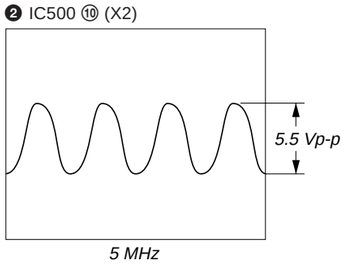


– SUB BOARD –

❶ IC600 ㊳ (X2)

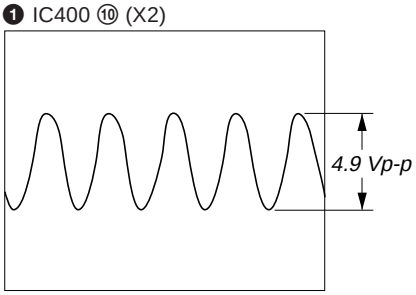


❷ IC500 ⑩ (X2)



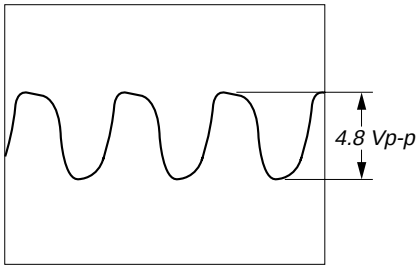
– MAIN BOARD –

❶ IC400 ⑩ (X2)



5 MHz

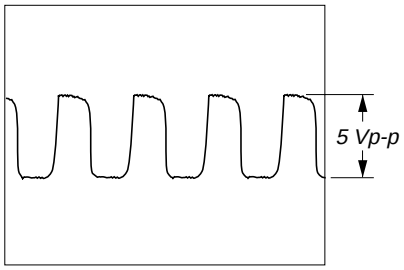
❷ IC400 ⑬ (XT2)



32 kHz

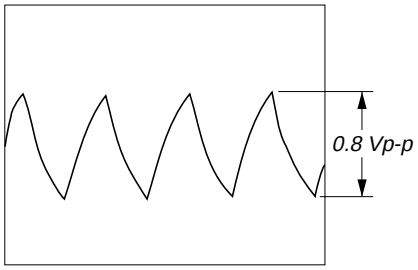
– PANEL BOARD –

❶ IC700 ⑳ (XOUT)



Approx. 362 kHz

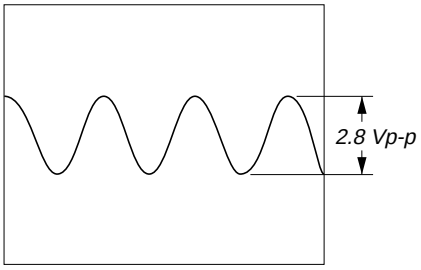
❷ IC700 ㉑ (XIN)



Approx. 354 kHz

– RM BOARD –

❶ IC1 ⑦ (XO) (KEY ON)

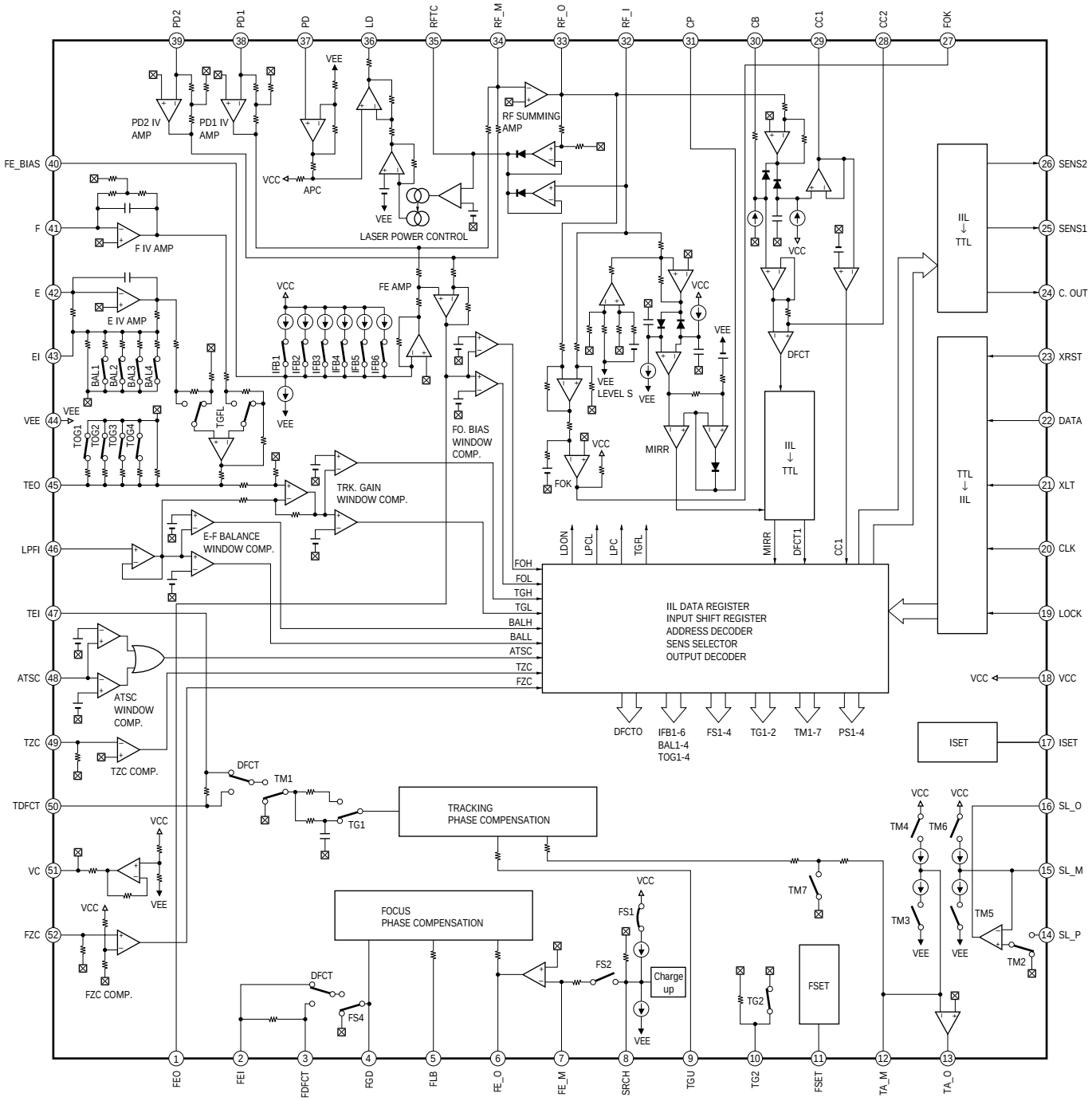


3 MHz

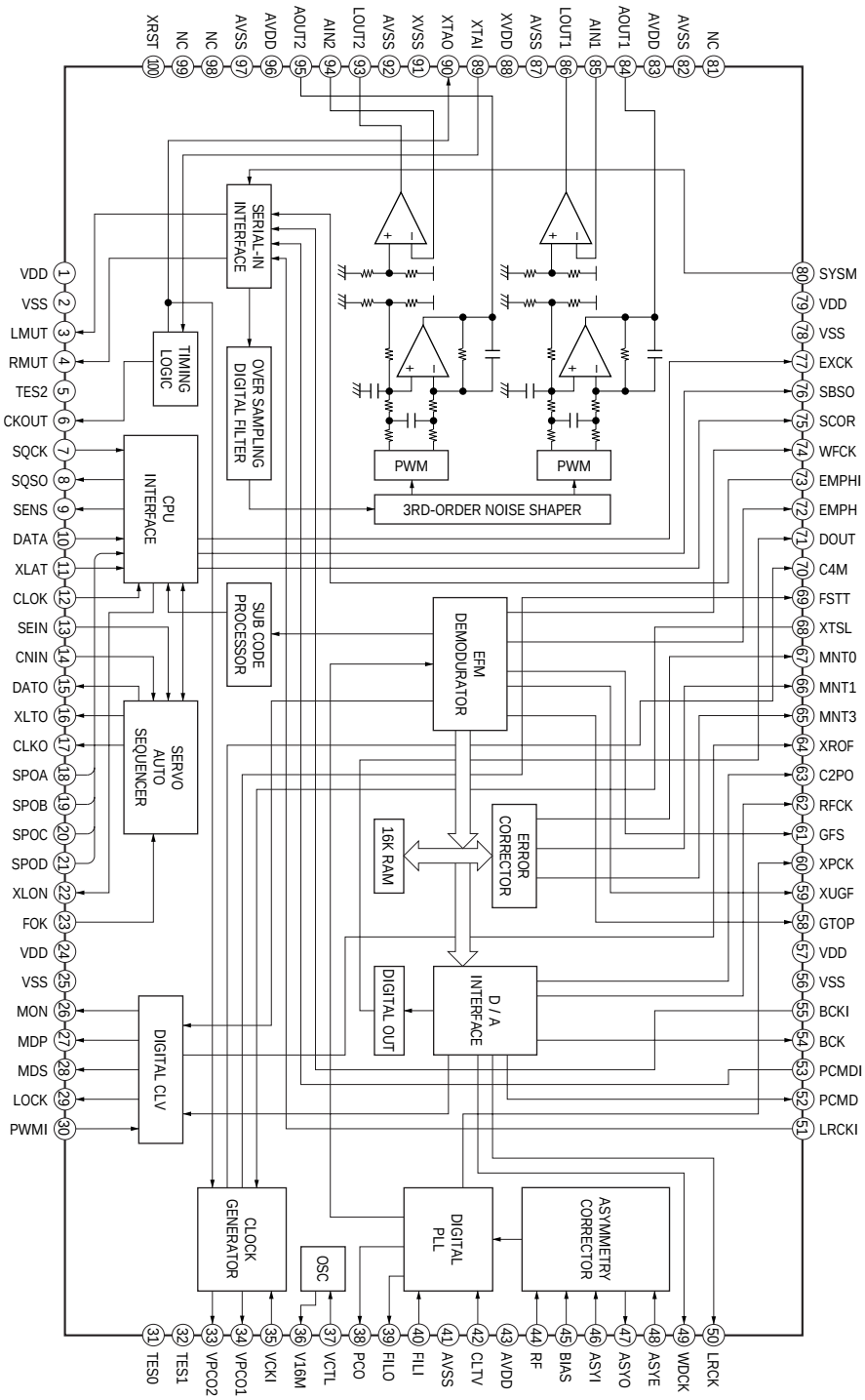
• IC Block Diagrams

– BD (CD) BOARD –

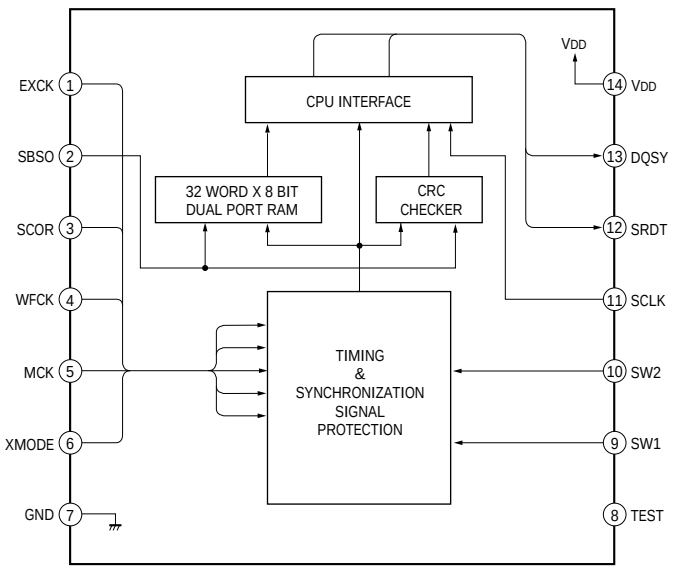
IC101 CXA1992AR



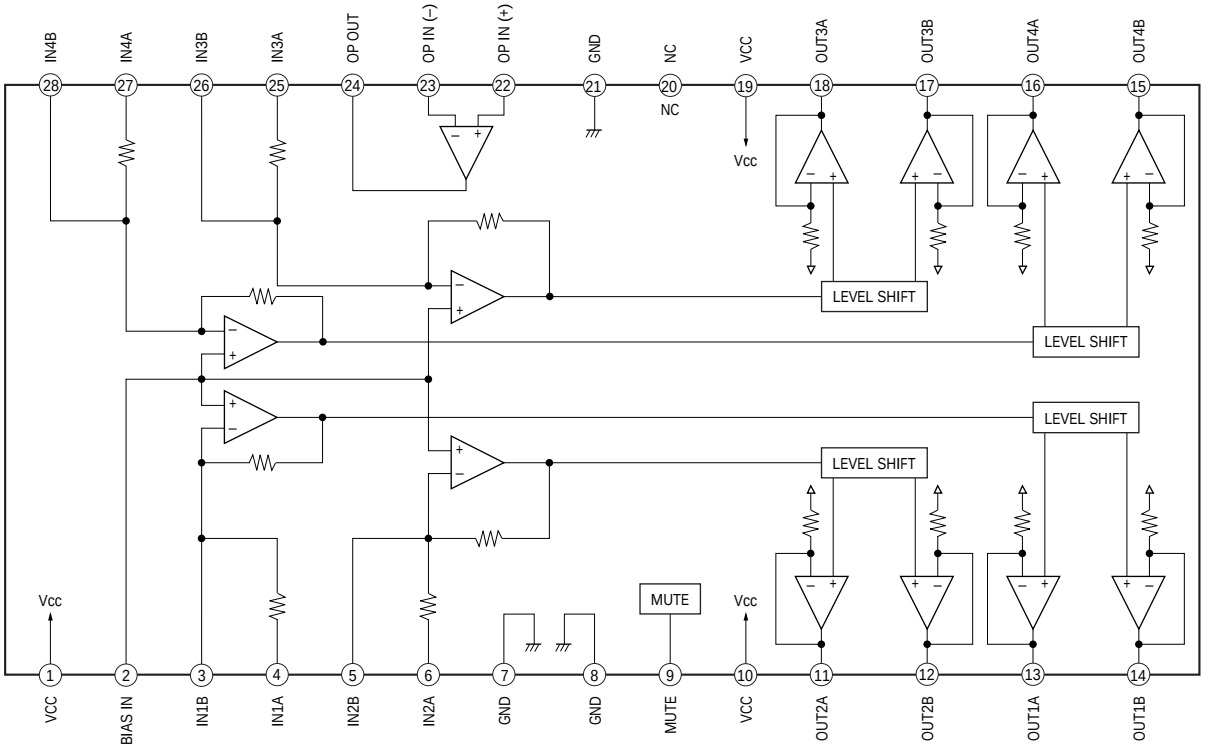
IC103 CXD2519Q



IC104 LC89170M-TLM

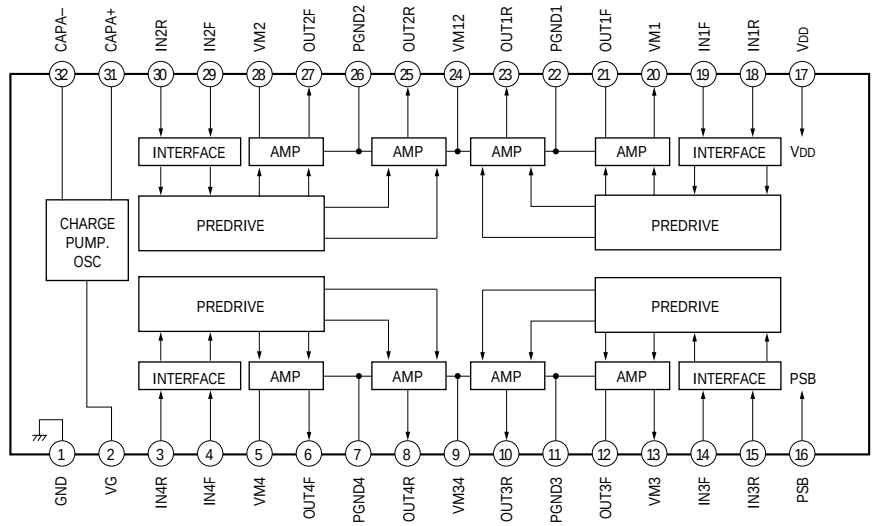


IC102 BA5941FP-E2

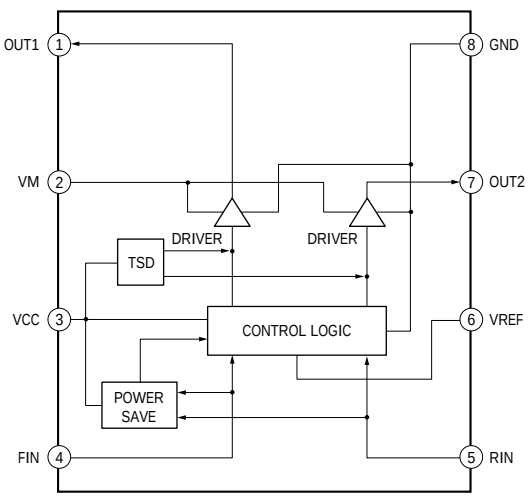


– BD (MD) BOARD –

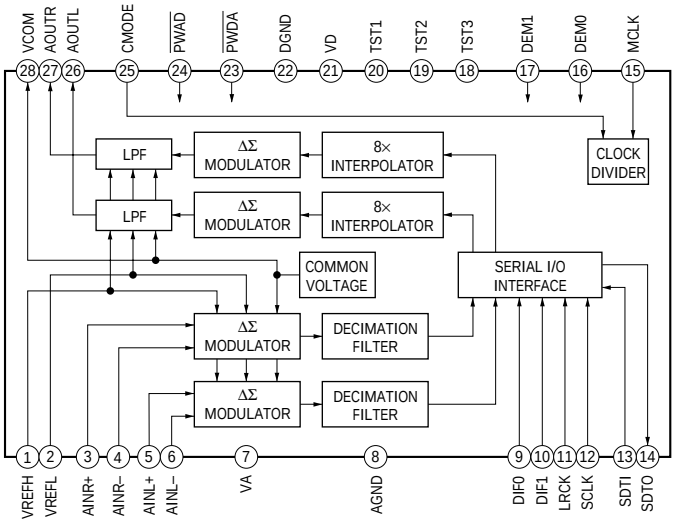
IC152 BH6511FS-E2



IC172 BA6287F

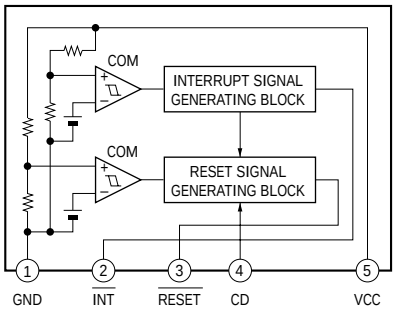


IC201 AK4520A-VF-E2



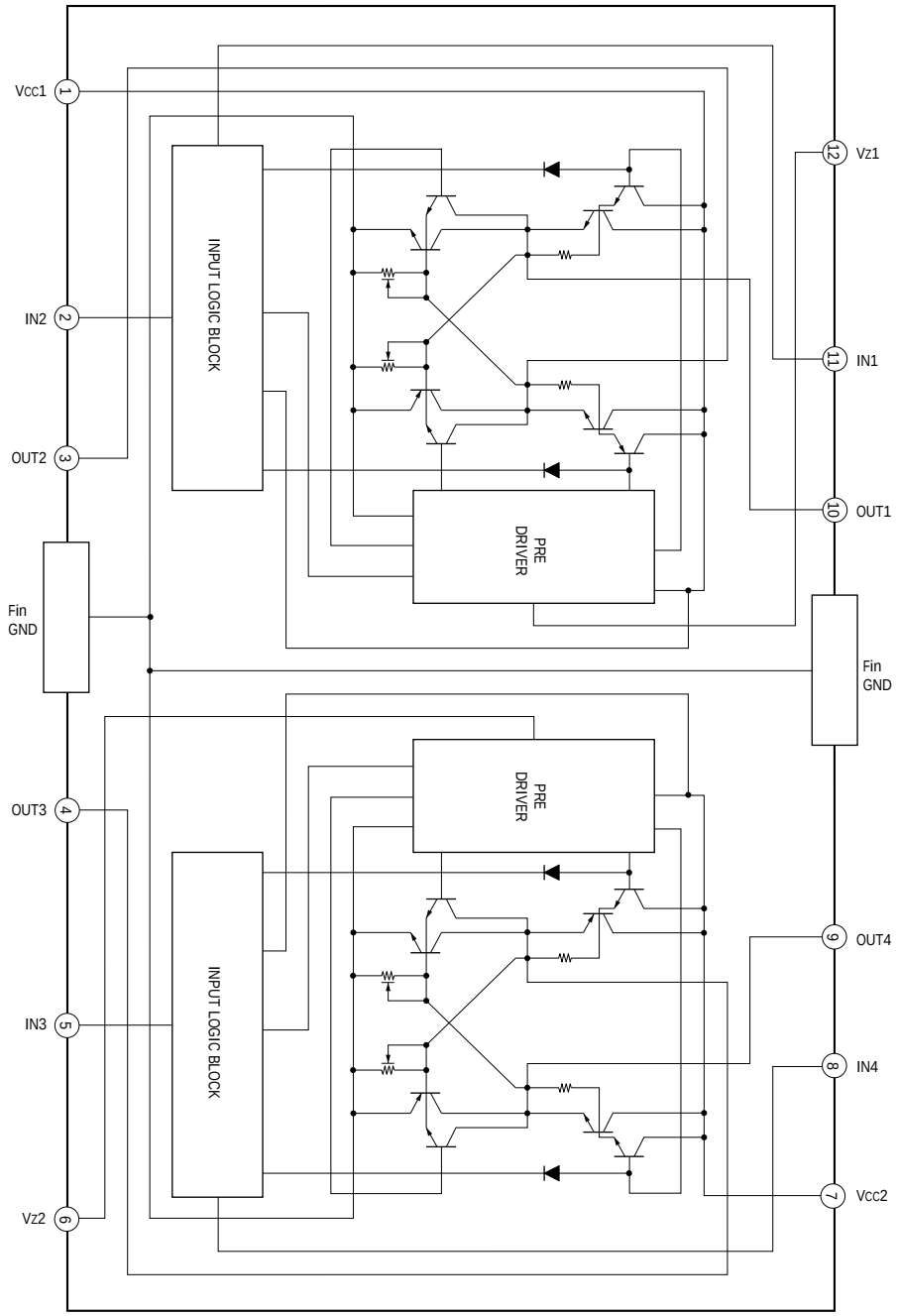
– SUB BOARD –

IC501 M62016L



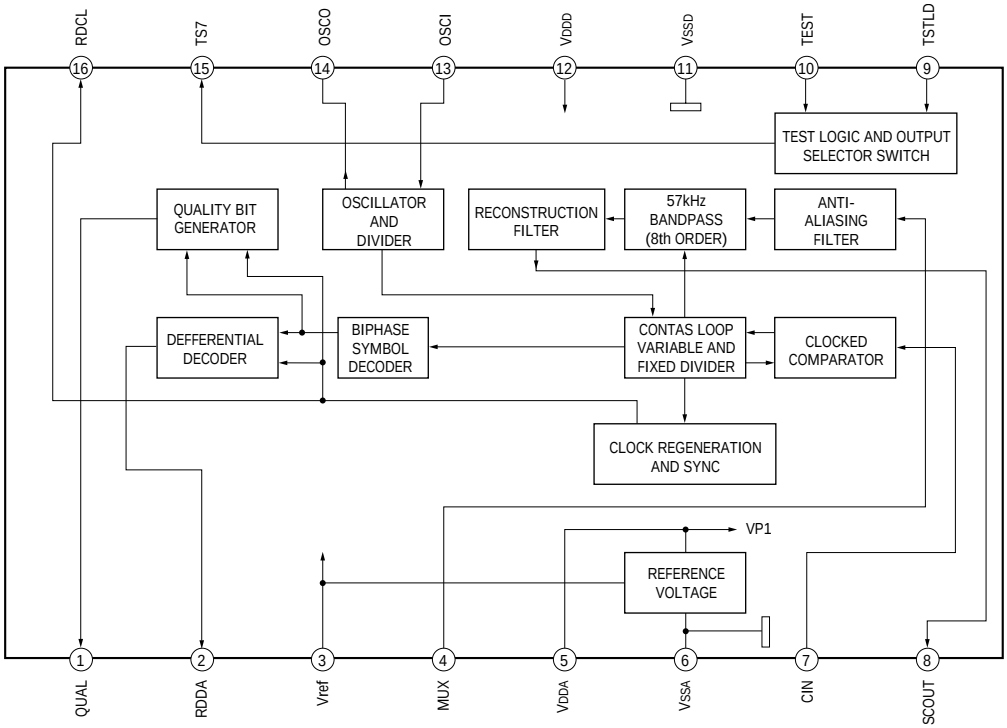
– SUB BOARD/CDM BOARD –

IC560 (SUB BOARD), IC690 (CDM BOARD) LB1648



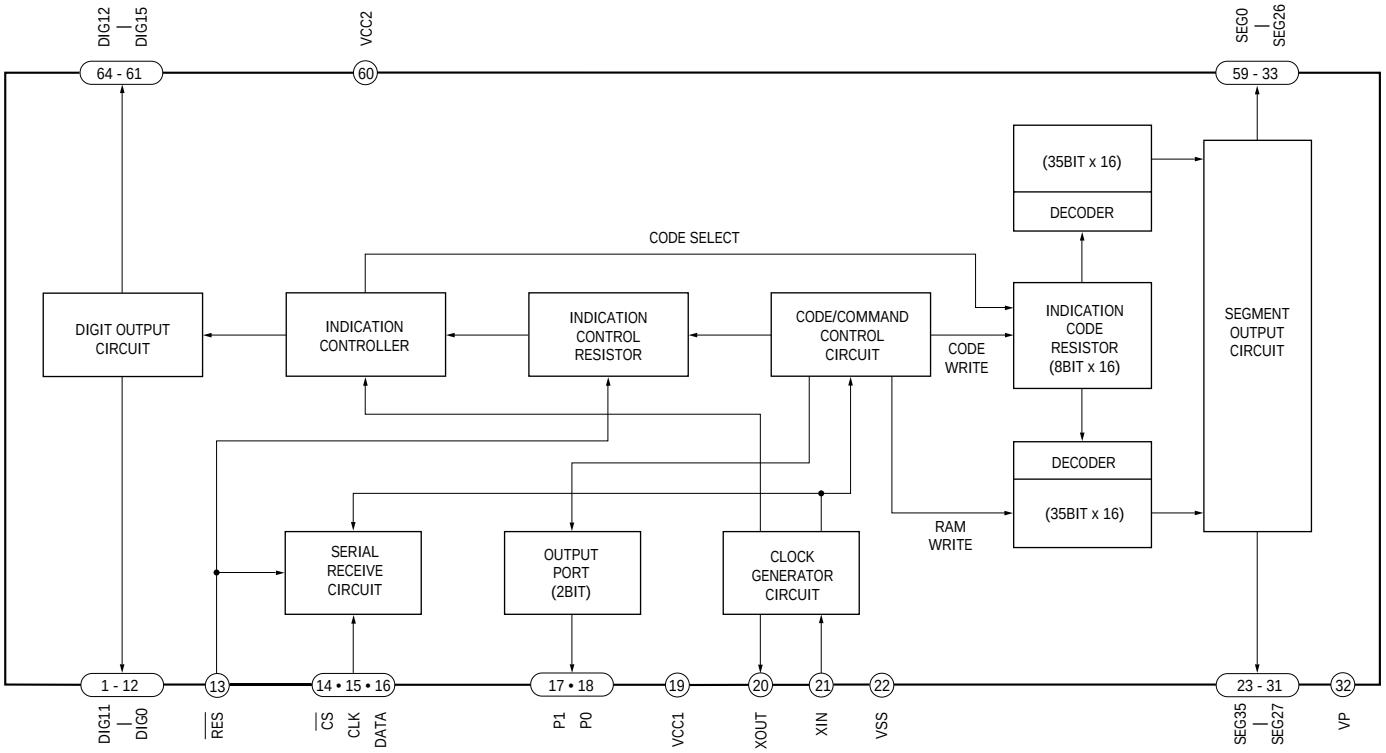
– MAIN BOARD –

IC361 BU1922-E2

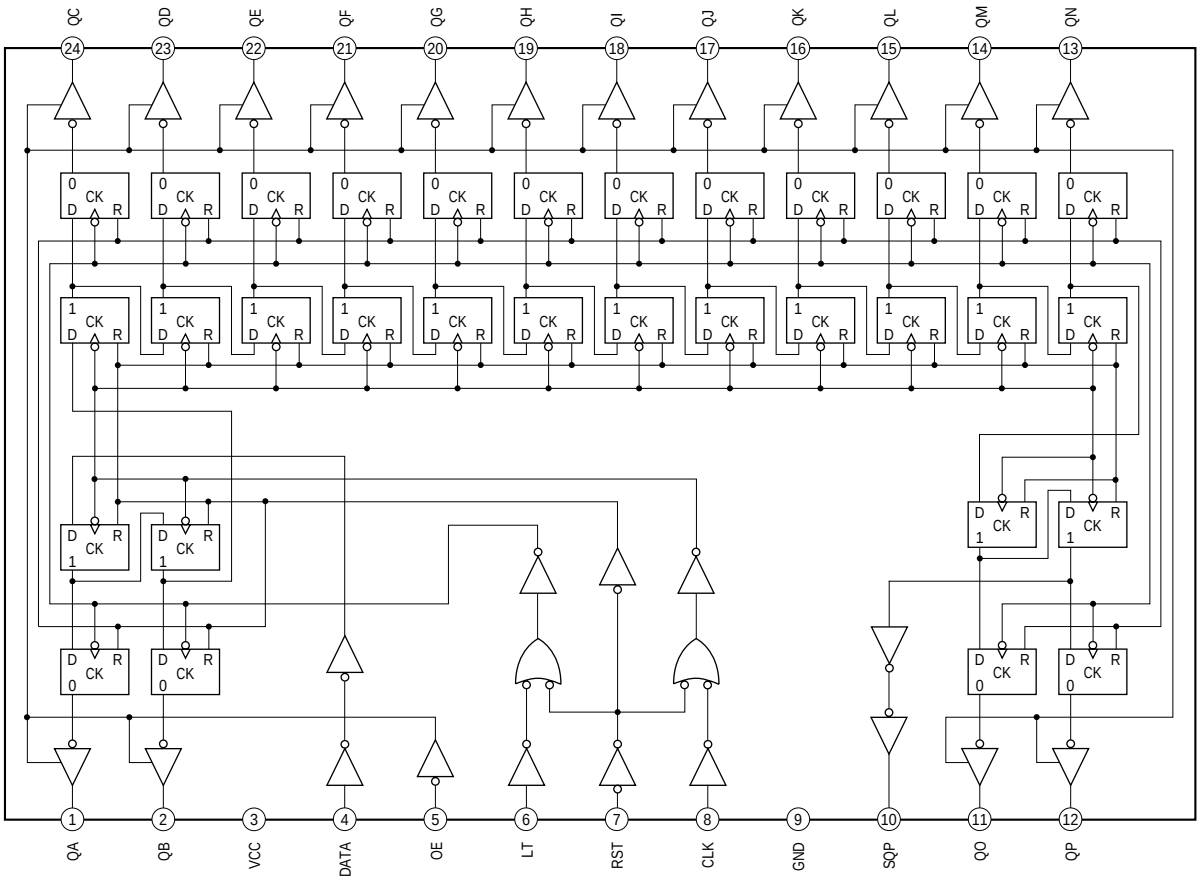


– PANEL BOARD –

IC700 M66004M8FP-200D



IC701 M66310FP-E2



6-19. IC PIN FUNCTION DESCRIPTION

• BD (MD) BOARD IC101 CXA2523AR (RF AMPLIFIER, FOCUS/TRACKING ERROR AMPLIFIER)

Pin No.	Pin Name	I/O	Function
1	I	I	I-V converted RF signal I input from the optical pick-up block detector
2	J	I	I-V converted RF signal J input from the optical pick-up block detector
3	VC	O	Middle point voltage (+1.65V) generation output terminal
4 to 9	A to F	I	Signal input from the optical pick-up detector
10	PD	I	Light amount monitor input terminal
11	APC	O	Laser amplifier output terminal to the automatic power control circuit
12	APCREF	I	Reference voltage input terminal for setting laser power
13	GND	—	Ground terminal
14	TEMPI	I	Connected to the temperature sensor
15	TEMPR	O	Output terminal for a temperature sensor reference voltage
16	SWDT	I	Writing serial data input from the CXD2652AR (IC121)
17	SCLK	I	Serial clock signal input from the CXD2652AR (IC121)
18	XLAT	I	Serial latch signal input from the CXD2652AR (IC121)
19	$\overline{\text{XSTBY}}$	I	Standby signal input terminal "L": standby (fixed at "H" in this set)
20	F0CNT	I	"Center frequency control voltage input terminal of internal circuit (BPF22, BPF3T, EQ) input from the CXD2652AR (IC121)"
21	VREF	O	Reference voltage output terminal Not used (open)
22	EQADJ	I	Center frequency setting terminal for the internal circuit (EQ)
23	3TADJ	I	Center frequency setting terminal for the internal circuit (BPF3T)
24	VCC	—	Power supply terminal (+3.3V)
25	WBLADJ	I	Center frequency setting terminal for the internal circuit (BPF22)
26	TE	O	Tracking error signal output to the CXD2652AR (IC121)
27	CSLED	I	Connected to the external capacitor for low-pass filter of the sled error signal
28	SE	O	Sled error signal output to the CXD2652AR (IC121)
29	ADFM	O	FM signal output of the ADIP
30	ADIN	I	Receives a ADIP FM signal in AC coupling
31	ADAGC	I	Connected to the external capacitor for ADIP AGC
32	ADFG	O	ADIP duplex signal (22.05 kHz ± 1 kHz) output to the CXD2652AR (IC121)
33	AUX	O	Auxiliary signal (I3 signal/temperature signal) output to the CXD2652AR (IC121)
34	FE	O	Focus error signal output to the CXD2652AR (IC121)
35	ABCD	O	Light amount signal (ABCD) output to the CXD2652AR (IC121)
36	BOTM	O	Light amount signal (RF/ABCD) bottom hold output to the CXD2652AR (IC121)
37	PEAK	O	Light amount signal (RF/ABCD) peak hold output to the CXD2652AR (IC121)
38	RF	O	Playback EFM RF signal output to the CXD2652AR (IC121)
39	RFAGC	I	Connected to the external capacitor for RF auto gain control circuit
40	AGCI	I	Receives a RF signal in AC coupling
41	COMPO	O	User comparator output terminal Not used (open)
42	COMPP	I	User comparator input terminal Not used (fixed at "L")
43	ADDC	I	Connected to the external capacitor for cutting the low band of the ADIP amplifier
44	OPO	O	User operational amplifier output terminal Not used (open)
45	OPN	I	User operational amplifier inversion input terminal Not used (fixed at "L")
46	RFO	O	RF signal output terminal
47	MORFI	I	Receives a MO RF signal in AC coupling
48	MORFO	O	MO RF signal output terminal

• BD (MD) BOARD IC121 CXD2652AR
(DIGITAL SIGNAL PROCESSOR, DIGITAL SERVO PROCESSOR, EFM/ACIRC ENCODER/DECODER, SHOCK PROOF MEMORY CONTROLLER, ATRAC ENCODER/DECODER)

Pin No.	Pin Name	I/O	Function
1	MNT0 (FOK)	O	Focus OK signal output to the system controller (IC316) "H" is output when focus is on
2	MNT1(SHCK)	O	Track jump detection signal output to the system controller (IC316)
3	MNT2 (XBUSY)	O	Monitor 2 signal output to the system controller (IC316)
4	MNT3 (SLOC)	O	Monitor 3 signal output to the system controller (IC316)
5	SWDT	I	Writing data signal input from the system controller (IC316)
6	SCLK	I	Serial clock signal input from the system controller (IC316)
7	XLAT	I	Serial latch signal input from the system controller (IC316)
8	SRDT	O (3)	Reading data signal output to the system controller (IC316)
9	SENS	O (3)	Internal status (SENSE) output to the system controller (IC316)
10	$\overline{\text{XRST}}$	I	Reset signal input from the system controller (IC316) "L": reset
11	SQSY	O	Subcode Q sync (SCOR) output to the system controller (IC316) "L" is output every 13.3 msec Almost all, "H" is output
12	DQSY	O	Digital In U-bit CD format subcode Q sync (SCOR) output to the system controller (IC316) "L" is output every 13.3 msec Almost all, "H" is output
13	RECP	I	Laser power selection signal input from the system controller (IC316) "H": recording mode, "L": playback mode
14	XINT	O	Interrupt status output to the system controller (IC316)
15	TX	I	Recording data output enable signal input from the system controller (IC316) Writing data transmission timing input (Also serves as the magnetic head on/off output)
16	OSCI	I	System clock signal (512Fs=22.5792 MHz) input from the A/D, D/A converter (IC201)
17	OSCO	O	System clock signal (512Fs=22.5792 MHz) output terminal Not used (open)
18	XTSL	I	Input terminal for the system clock frequency setting "L": 45.1584 MHz, "H": 22.5792 MHz (fixed at "H" in this set)
19	RVDD	—	Power supply terminal (+3.3V) (digital system)
20	RVSS	—	Ground terminal (digital system)
21	DIN	I	Digital audio signal input terminal when recording mode (for optical in)
22	DOUT	O	Digital audio signal output terminal when playback mode (for optical out) Not used
23	ADDT	I	Recording data input from the A/D, D/A converter (IC201)
24	DADT	O	Playback data output to the A/D, D/A converter (IC201)
25	LRCK	O	L/R sampling clock signal (44.1 kHz) output to the A/D, D/A converter (IC201)
26	XBCK	O	Bit clock signal (2.8224 MHz) output to the A/D, D/A converter (IC201)
27	FS256	O	Clock signal (11.2896 MHz) output terminal Not used (open)
28	DVDD	—	Power supply terminal (+3.3V) (digital system)
29 to 32	A03 to A00	O	Address signal output to the D-RAM (IC124)
33	A10	O	Address signal output to the external D-RAM Not used (open)
34 to 38	A04 to A08	O	Address signal output to the D-RAM (IC124)
39	A11	O	Address signal output to the external D-RAM Not used (open)
40	DVSS	—	Ground terminal (digital system)
41	$\overline{\text{XOE}}$	O	Output enable signal output to the D-RAM (IC124)
42	$\overline{\text{XCAS}}$	O	Column address strobe signal output to the D-RAM (IC124)
43	A09	O	Address signal output to the D-RAM (IC124)
44	XRAS	O	Row address strobe signal output to the D-RAM (IC124)
45	$\overline{\text{XWE}}$	O	Write enable signal output to the D-RAM (IC124)

* O (3) for 3-state output in the column I/O.

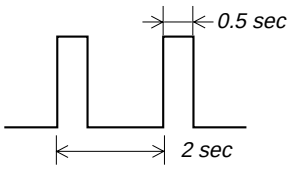
Pin No.	Pin Name	I/O	Function
46	D1	I/O	Two-way data bus for the D-RAM (IC124)
47	D0	I/O	
48	D2	I/O	
49	D3	I/O	
50	MVCI	I	Digital in PLL oscillation input from the external VCO Not used (fixed at "L")
51	ASYO	O	Playback EFM full-swing output
52	ASYI	I (A)	Playback EFM asymmetry comparator voltage input
53	AVDD	—	Power supply terminal (+3.3V) (analog system)
54	BIAS	I (A)	Playback EFM asymmetry circuit constant current input
55	RFI	I (A)	Playback EFM RF signal input from the CXA2523R (IC101)
56	AVSS	—	Ground terminal (analog system)
57	PDO	O (3)	Phase comparison output for clock playback analog PLL of the playback EFM Not used (open)
58	PCO	O (3)	Phase comparison output for master clock of the recording/playback EFM master PLL
59	FILI	I (A)	Filter input for master clock of the recording/playback master PLL
60	FILO	O (A)	Filter output for master clock of the recording/playback master PLL
61	CLTV	I (A)	Internal VCO control voltage input of the recording/playback master PLL
62	PEAK	I (A)	Light amount signal (RF/ABCD) peak hold input from the CXA2523R (IC101)
63	BOTM	I (A)	Light amount signal (RF/ABCD) bottom hold input from the CXA2523R (IC101)
64	ABCD	I (A)	Light amount signal (ABCD) input from the CXA2523R (IC101)
65	FE	I (A)	Focus error signal input from the CXA2523R (IC101)
66	AUX1	I (A)	Auxiliary signal (I3 signal/temperature signal) input from the CXA2523R (IC101)
67	VC	I (A)	Middle point voltage (+1.65V) input from the CXA2523R (IC101)
68	ADIO	O (A)	Monitor output of the A/D converter input signal Not used (open)
69	AVDD	—	Power supply terminal (+3.3V) (analog system)
70	ADRT	I (A)	A/D converter operational range upper limit voltage input terminal (fixed at "H" in this set)
71	ADRB	I (A)	A/D converter operational range lower limit voltage input terminal (fixed at "L" in this set)
72	AVSS	—	Ground terminal (analog system)
73	SE	I (A)	Sled error signal input from the CXA2523R (IC101)
74	TE	I (A)	Tracking error signal input from the CXA2523R (IC101)
75	AUX2	I (A)	Auxiliary signal input terminal Not used (fixed at "H")
76	DCHG	I (A)	Connected to the +3.3V power supply
77	APC	I (A)	Error signal input for the laser automatic power control Not used (fixed at "H")
78	ADFG	I	ADIP duplex FM signal (22.05 kHz ± 1 kHz) input from the CXA2523R (IC101)
79	F0CNT	O	Filter f0 control signal output to the CXA2523R (IC101)
80	XLRF	O	Serial latch signal output to the CXA2523R (IC101)
81	CKRF	O	Serial clock signal output to the CXA2523R (IC101)
82	DTRF	O	Writing data output to the CXA2523R (IC101)
83	APCREF	O	Control signal output to the reference voltage generator circuit for the laser automatic power control
84	LDDR	O	PWM signal output for the laser automatic power control Not used (open)
85	TRDR	O	Tracking servo drive PWM signal (–) output to the BH6511FS (IC152)
86	TFDR	O	Tracking servo drive PWM signal (+) output to the BH6511FS (IC152)
87	DVDD	—	Power supply terminal (+3.3V) (digital system)
89	FRDR	O	Focus servo drive PWM signal (–) output to the BH6511FS (IC152)

* I (A) for analog input, O (3) for 3-state output, and O (A) for analog output in the column I/O.

Pin No.	Pin Name	I/O	Function
90	FS4	O	Clock signal (176.4 kHz) output terminal (X'tal system) Not used (open)
91	SRDR	O	Sled servo drive PWM signal (–) output to the BH6511FS (IC152)
92	SFDR	O	Sled servo drive PWM signal (+) output to the BH6511FS (IC152)
93	SPRD	O	Spindle servo drive PWM signal (–) output to the BH6511FS (IC152)
94	SPFD	O	Spindle servo drive PWM signal (+) output to the BH6511FS (IC152)
95	TEST0	I	Input terminal for the test (fixed at "L")
96	TEST1	I	
97	TEST2	I	
98	TEST3	I	
99	DVSS	—	Ground terminal (digital system)
100	EFMO	O	EFM signal output to over write head drive (IC181)

• BD (MD) BOARD IC316 M30610MC-109FP (MD SYSTEM CONTROL)

Pin No.	Pin Name	I/O	Function
1	JOG0	I	Encoder switch signal input terminal Not used (fixed at “L”)
2	JOG1	I	Encoder switch signal input terminal Not used (fixed at “L”)
3,4	————	I	Not used (fixed at “L”)
5	SQSY	I	Subcode Q sync (SCOR) input from the CXD2652AR (IC121)
6	REMCON	I	Remote control signal input (fixed at “H”)
7	EMP	O	De-emphasis control signal output to the AK4520 (IC201)
8	BYTE	I	External data bus line byte select signal input terminal “L”:16bit “H”: 8bit (fixed at “L”)
9	CNVSS	—	Ground terminal
10	XIN-T	I	Sub system clock input terminal Not used (fixed at “L”)
11	XOUT-T	O	Sub system clock output terminal Not used (pull down)
12	$\overline{\text{SYSTEM-RST}}$	I	MD reset signal input from the master controller (IC500)
13	XOUT	O	Main system clock signal output terminal (7MHz)
14	GND	—	Ground terminal
15	XIN	I	Main system clock signal input terminal (7MHz)
16	+3V	—	Power supply terminal (+3.3V)
17	————	I	Not used (fixed at “H”)
18	$\overline{\text{AMUTE}}$	O	Mute control signal output terminal Not used (fixed at “L”)
19	$\overline{\text{PWR-DWN}}$	I	Power down detect signal input terminal
20	DQSY	I	Digital in U-bit CD format subcode Q sync (SCOR) input from the CXD2652SAR (IC121)
21	STB	I	Stand-by signal input terminal Not used (pull down)
22	DA-RST	O	D/A converter reset signal output terminal Not used (pull down)
23	XINT	I	Interrupt status input from the CXD2652AR (IC121)
24	DA-EN	O	D/A converter enable signal output to the AK4520 (IC201)
25	AD-EN	O	A/D converter enable signal output to the AK4520 (IC201)
26	MEC-BUSY	O	Mecha-busy signal output to the master controller (IC500)
27	FLCS	O	Display clear signal output terminal Not used (pull down)
28	FLCLK	O	Display data clock signal output terminal Not used (pull down)
29	————	I	Not used (fixed at “L”)
30	FLDATA	O	Display data signal output terminal Not used (pull down)
31	TXD	O	MD control data signal output to the master controller (IC500)
32	RXD	I	MD control data signal input to the master controller (IC500)
33	CLK	I	MD control data clock signal input to the master controller (IC500)
34	MAS-BUSY	I	Master-busy signal input from the master controller (IC500)
35	SWDT	O	Writing data signal output to the CXD2652AR (IC121)
36	SRDT	I	Reading data signal input from the CXD2652AR (IC121)
37	SCLK	O	Serial clock signal output to the CXD2652AR (IC121)
38	XLAT	O	Serial latch signal output to the CXD2652AR (IC121)
39	————	O	Not used (fixed at “L”)
40	$\overline{\text{DIG-RST}}$	O	Reset signal output enable signal output to the CXD2652AR (IC121) “L”:reset
41	SENS	I	Status (SENSE) input from the CXD2652AR (IC121)
42	SCTX	O	Recording data output enable signal output to the CXD2652AR (IC121)
43	————	I	Not used (fixed at “L”)
44	WRPWR	O	Laser power selection signal output to the CXD2652AR (IC121) “H”:rec, “L”:play
45	MNT3	I	Monitor signal input from the CXD2652AR (IC121)
46	MNT2	I	Busy signal input from the CXD2652AR (IC121)
47	MNT1	I	Track jump detection signal input from the CXD2652AR (IC121)
48	MNTO	I	Focus OK signal input from the CXD2652AR (IC121) “L”:NG

Pin No.	Pin Name	I/O	Function
49	LDON	O	Laser diode ON signal output terminal "H":laser diode ON
50	MOD	O	Laser modulation select signal output Playback power: "L", Stop: "H", Recording power: 
51	LDIN	O	Loading-in signal output terminal Not used (open)
52	LDOUT	O	Loading-out signal output terminal Not used (open)
53	LD-LOW	O	Loading motor voltage control signal output to the loading motor driver Not used (open)
54	PROTECT	I	PROTECT switch (S683) detect signal input terminal "H": protect
55	REFLECT	I	REFLECT switch (S682) detect signal input terminal "L": high reflection rate disc, "H": low reflection rate disc
56	PACK-IN	I	MD PACK IN switch detect signal input terminal Not used (fixed at "H")
57	PACK-OUT	I	PACK OUT switch detect signal input terminal Not used (fixed at "H")
58	CHUCK-IN	I	CHUCKING IN switch detect signal input terminal Not used (fixed at "H")
59	LIMIT-IN	I	LIMIT-IN switch (S681) detect signal input terminal The optical pick-up is inner position when "L"
60	REC. P	I	REC POSITION switch detect signal input terminal Not used (fixed at "H")
61	PB. P	I	PB POSITION switch detect signal input terminal Not used (fixed at "L")
62	+3.3V	—	Power supply terminal (+3.3V)
63	————	—	Not used (fixed at "L")
64	GND	—	Ground terminal
65 to 72	————	—	Not used (fixed at "L")
73	HEAD SW UP	I	Over write head up switch (S6) detect signal input terminal "L":active
74	HEAD SW DOWN	I	Over write head down switch (S7) detect signal input terminal "L":active
75	HEAD UP	O	Over write head UP/DOWN motor (M905) control signal output terminal *1
76	HEAD DOWN	O	Over write head UP/DOWN motor (M905) control signal output terminal *1
77, 78	————	—	Not used (fixed at "L")
79	SDA	I/O	Two-way data bus for the EEPROM (IC171)
80	SCL	O	Clock signal output to the EEPROM (IC171)
81	————	I	Not used (fixed at "L")
82	————	I	Not used (fixed at "H")
83	MODE	I	Input terminal for setting MD single or changer mode "L":single mode, "H":changer mode (fixed at "H" in this set)
84, 85	————	I	Not used (fixed at "L")
86	REC/$\overline{\text{PB}}$	O	REC/PB status control signal output terminal Not used (pull down)
87	$\overline{\text{DOUTXMUTE}}$	O	Mute control signal output terminal Not used (pull down)
88 to 90	————	I	Not used (fixed at "L")
91	KEY0	—	Key signal input terminal Not used (fixed at "H")
92	KEY1	—	Key signal input terminal Not used (fixed at "H")
93	KEY2	—	Key signal input terminal Not used (fixed at "H")
94, 95	————	I	Not used (fixed at "L")
96	AVSS	—	Ground terminal
97	————	I	Not used (fixed at "L")

Pin No.	Pin Name	I/O	Function
98	VREF	—	Power supply terminal (+3.3V)
99	3.3V	—	Power supply terminal (+3.3V)
100	————	I	Not used (fixed at “L”)

*1 Over write head UP/DOWN motor (M905) control

Operation / Terminal	UP	DOWN	BRAKE	RUN IDLE
HEAD UP (pin ⑮)	“H”	“L”	“H”	“L”
HEAD DOWN (pin ⑯)	“L”	“H”	“H”	“L”

• SUB BOARD IC500 µPD78078GF-075-3BA (MASTER CONTROLLER)

Pin No.	Pin Name	I/O	Function
1 to 4	DATA0 to DATA3	I/O	Two way data bus to the system controller (IC400) and CD mechanism controller (IC600)
5	CLK OUT	O	Clock signal output to the system controller (IC400) and CD mechanism controller (IC600)
6, 7	NC	I	Not used (fixed at "L")
8	$\overline{\text{AC CUT}}$	I	Power down detect signal input terminal "L": Power down
9	VSS	–	Ground terminal
10	X2	O	Main system clock output terminal (5 MHz)
11	X1	I	Main system clock input terminal (5 MHz)
12	VDD	–	Power supply terminal (+5 V)
13	XT2	O	Sub system clock output terminal Not used (open)
14	XT1	I	Sub system clock input terminal Not used (fixed at "L")
15	$\overline{\text{RESET}}$	I	System reset signal input from the reset signal generator (IC400) "L": reset For several hundreds msec. after the power supply rises, "L" is input, then it changes to "H"
16	CLK IN	I	Clock signal input from the system controller (IC400) and CD mechanism controller (IC600)
17	BUSY	O	Busy signal output to the system controller (IC400) and CD mechanism controller (IC600)
18	SENSOR1	I	Detection input from the elevator position sensor (D1)
19 to 22	NC	I	Not used (fixed at "L")
23	AVDD	–	Power supply terminal (+5 V) (for A/D converter section, analog system)
24	AVREF0	I	Reference voltage input terminal (for A/D converter)
25 to 28	KEY0 to KEY3	I	Key input terminal Not used (fixed at "H")
29	$\overline{\text{PARA}}$/UART	I	Input terminal for SERIAL/UART setting "L": SERIAL, "H": UART (fixed at "L" in this set)
30	$\overline{3}$/5	I	Input terminal for MD changer type setting "L": 3 discs, "H": 5 discs (fixed at "L" in this set)
31	$\overline{\text{FL14}}$	I	Input terminal for figure number setting of display "L": 14 figures, "H": 13 figures (fixed at "L" in this set)
32	$\overline{\text{SLAVE}}$	I	Input terminal for separate/complete type setting of MD section and other sections "L": complete type, "H": separate type (fixed at "L" in this set)
33	AVSS	–	Ground terminal (for A/D converter)
34	LOADING D/A	O	D/A output terminal for loading motor drive signal Not used (open)
35	ELEVATOR D/A	O	D/A output terminal for elevator motor drive signal Not used (open)
36	AVREF1	I	Reference voltage input terminal (+5 V) (for D/A converter)
37	RXD (UART)	I	UART data input terminal Not used (fixed at "L")
38	TXD (UART)	O	UART data output terminal Not used (open)
39	NC	I	Not used (fixed at "L")
40	VSS	–	Ground terminal
41	NC	I	Not used (fixed at "L")
42	FL DATA	O	Serial data output terminal to display Not used (open)
43	FL CLK	O	Clock signal output terminal to display Not used (open)
44	$\overline{\text{FL CS}}$	O	Chip enable signal output terminal to display Not used (open)
45	$\overline{\text{FL RST}}$	O	Reset signal output terminal to display Not used (open)
46	RXD	I	UART data input terminal from the MD mechanism controller (IC316)
47	TXD	O	UART data output terminal to the MD mechanism controller (IC316)
48	SCK	O	Clock signal output terminal to the MD mechanism controller (IC316)
49	MASTER BUSY	O	Busy signal output terminal to the MD mechanism controller (IC316) "L": busy
50	MEC-BUSY	I	Busy signal input terminal from the MD mechanism controller (IC316) "L": busy
51	MECHA RESET	O	Reset signal output terminal to the MD mechanism controller (IC316) "H": reset
52	SENSOR2	I	Detection input from the elevator position sensor (D2)
53	NC	I	Not used (fixed at "L")
54	LED DIGITAL	O	LED drive signal output terminal for DIGITAL indication Not used (open)
55	LED ANALOG	O	LED drive signal output terminal for ANALOG indication Not used (open)
56	LED MONO	O	LED drive signal output terminal for MONO indication Not used (open)

Pin No.	Pin Name	I/O	Function
57	LED CLR	O	Clear signal output terminal to LED driver Not used (open)
58	LED STB	O	Strobe signal output terminal to LED driver Not used (open)
59	LED CLK	O	Clock signal output terminal to LED driver Not used (open)
60	LED DATA	O	Data output terminal to LED driver Not used (open)
61	FS32	O	LED drive signal output terminal for sampling frequency (FS32) indication Not used (open)
62	FS44	O	LED drive signal output terminal for sampling frequency (FS44) indication Not used (open)
63	FS48	O	LED drive signal output terminal for sampling frequency (FS48) indication Not used (open)
64	CONTINUE	O	LED drive signal output terminal for CONTINUE indication Not used (open)
65	SHUFFLE	O	LED drive signal output terminal for SHUFFLE indication Not used (open)
66	PROGRAM	O	LED drive signal output terminal for PROGRAM indication Not used (open)
67	LED CD SYNC	O	LED drive signal output terminal for CD SYNC indication Not used (open)
68	LED REC IT	O	LED drive signal output terminal for REC IT indication Not used (open)
69, 70	NC	I	Not used (fixed at "L")
71	VSS	–	Ground terminal
72, 73	NC	I	Not used (fixed at "L")
74 to 81	PWM0 to PWM7	I	PWM input terminal (fixed at "L" in this set)
82	LOADING IN	O	Motor control signal output terminal to the minidisc loading motor (M903) *1
83	LOADING OUT	O	Motor control signal output terminal to the minidisc loading motor (M903) *1
84	ELEVATOR UP	O	Motor control signal output terminal to the minidisc elevator UP/DOWN motor (M904) *2
85	ELEVATOR DOWN	O	Motor control signal output terminal to the minidisc elevator UP/DOWN motor (M904) *2
86	HOME SW	I	Detection input from the home position detect switch (S8) "L": home position
87	DISC1 SW	I	Detection input from the disc (DISC1) in detect switch (S1) "L": disc in
88	DISC2 SW	I	Detection input from the disc in detect switch Not used (fixed at "L")
89	DISC3 SW	I	Detection input from the disc (DISC2) in detect switch (S3) "L": disc in
90	DISC4 SW	I	Detection input from the disc in detect switch Not used (fixed at "L")
91	DISC5 SW	I	Detection input from the disc (DISC3) in detect switch (S5) "L": disc in
92	OUT SW	I	Detection input from the loading out detect switch (S6) "L": loading out
93	IN SW	I	Detection input from the loading in detect switch (S7) "L": loading in
94	$\overline{\text{MUTE}}$	O	Line mute control signal output terminal Not used (open)
95	ATT	O	–6 dB ATT control signal output terminal Not used (open)
96	DIGITAL SELECT0	O	CD digital/optical-in convert signal output terminal to the optical-in circuit (IC641) "L": CD digital, "H": optical-in (fixed at "L" in this set)
97	RESET SW	I	Input terminal from the reset switch (S9) "L": reset
98	$\overline{\text{KANA INPUT}}$	I	Input terminal for Japanese letter input function setting "L": input possible (fixed at "H" in this set)
99	DIGITAL SELECT1	O	Digital-signal convert signal output terminal Not used (open)
100	NC	I	Not used (fixed at "L")

*1 Minidisc loading motor (M903) control

Terminal \ Operation	IN	OUT	BRAKE	RUN IDLE
LOADING IN (pin ⑧②)	"H"	"L"	"H"	"L"
LOADING OUT (pin ⑧③)	"L"	"H"	"H"	"L"

*2 Minidisc elevator UP/DOWN motor (M904) control

Terminal \ Operation	UP	DOWN	BRAKE
ELEVATOR UP (pin ⑧④)	"H"	"L"	"H"
ELEVATOR DOWN (pin ⑧⑤)	"L"	"H"	"H"

• SUB BOARD IC600 µPD784215GF-501-3BA (CD MECHANISM CONTROLLER)

Pin No.	Pin Name	I/O	Function
1, 2	————	O	Not used (open)
3	$\overline{\text{LEDLAT}}$	O	Serial latch pulse output terminal to LED driver Not used (open)
4	$\overline{\text{DRVCS}}$	O	Chip select signal output terminal to display Not used (open)
5	$\overline{\text{OE}}$	O	Enable signal output terminal to the S-RAM (IC601) "L": active
6	$\overline{\text{WE}}$	O	Writing enable signal output terminal to the S-RAM (IC601) "L": active
7	$\overline{\text{DRVRST}}$	O	Reset signal output terminal to display Not used (open)
8	————	O	Not used (open)
9	VDD	–	Power supply terminal (+5V)
10	$\overline{\text{BDRST}}$	O	Reset signal output terminal to CD section "L": reset
11	$\overline{\text{BDPWR}}$	O	Power ON/OFF control signal output terminal to main power (+5V) of CD section "L": power ON
12, 13	————	O	Not used (open)
14	$\overline{\text{LDOUT}}$	O	Motor control signal output terminal to the CD loading motor (M502) *1
15	$\overline{\text{LDIN}}$	O	Motor control signal output terminal to the CD loading motor (M502) *1
16	$\overline{\text{STKDWN}}$	O	Motor control signal output terminal to the CD elevator UP/DOWN motor (M501) *2
17	$\overline{\text{STKUP}}$	O	Motor control signal output terminal to the CD elevator UP/DOWN motor (M501) *2
18	$\overline{\text{OUTSW}}$	I	Detection input from the tray OPEN/CLOSE detect switch (SW505) "H": tray is close, "L": tray is open
19	$\overline{\text{INSW}}$	I	Detection input from the tray OPEN/CLOSE detect switch (SW505) "H": tray is open, "L": tray is close
20	$\overline{\text{STKSW}}$	I	Detection input from the STOCKER switch (SW501) "L": sub tray set into the stocker
21	$\overline{\text{MIDSW}}$	I	Detection input from the MID switch (SW504) "L": sub tray move between tray and stocker
22	TEST	I	Input terminal for test (fixed at "L")
23	$\overline{\text{INITSW}}$	I	Detection input from the INIT switch (SW502) "L": tray set down to play position
24	$\overline{\text{COUNTSW}}$	I	Detection input from the COUNT switch (SW503) "L": elevator up (or down) each sub tray stock position
25	$\overline{\text{PANEL SW}}$	I	Detection input from the CD tray door open/close detect switch (S790) "L": open , "H": close
26	————	I	Not used (fixed at "L")
27	ADJ	I	Input terminal for test mode setting of CD section (usually fixed at "H")
28	$\overline{\text{AMUTE}}$	O	Analog mute control signal output terminal Not used (open)
29	DATA	O	Serial data output terminal to the CXD2519Q (IC103) in CD section
30	CLK	O	Clock signal output terminal to the CXD2519Q (IC103) in CD section
31	$\overline{\text{XLT}}$	O	Serial latch pulse signal output terminal to the CXD2519Q (IC103) in CD section
32	BUSCLK	I	Clock signal input terminal from the system controller (IC400) and master controller (IC500)
33 to 36	BUSD0 to BUSD3	I/O	Two way data bus to the system controller (IC400) and master controller (IC500)
37	VDD	–	Power supply terminal (+5V)
38	X2	O	Main system clock output terminal (12.5MHz)
39	X1	I	Main system clock input terminal (12.5MHz)
40	VSS	–	Ground terminal
41	XT2	O	Sub system clock output terminal Not used (open)
42	XT1	I	Sub system clock input terminal Not used (fixed at "L")
43	$\overline{\text{RESET}}$	I	Reset signal input terminal "L": reset This set uses voltage down detection signal
44	BUSCLK	O	Clock signal output terminal to the system controller (IC400) and master controller (IC500)
45	$\overline{\text{BUSBSY}}$	I	Busy signal input terminal from the master controller (IC500)
46	SCOR	I	Subcode sync (S0+S1) detection signal input terminal from CXD2519Q (IC103) in CD section
47	DQSY	I	Data read standby signal input terminal from the CD text decoder (IC104)
48	————	O	Not used (open)
49, 50	JOG0, JOG1	I	JOG dial pulse input terminal Not used (fixed at "L")
51	AVDD	–	Power supply terminal (+5V) (for A/D converter section, analog system)

Pin No.	Pin Name	I/O	Function
52	AVREF0	I	Reference voltage (+5V) input terminal (for D/A converter)
53 to 55	KEY0 to KEY2	I	KEY input terminal Not used (fixed at "L")
56	SELECT0	I	Input terminal for Japanese letter input function setting "L": input possible (fixed at "H" in this set)
57	SELECT1	I	Input terminal for separate/complete type setting of CD section and other sections "H": complete type, "L": separate type (fixed at "H" in this set)
58	$\overline{\text{DISC SENSOR}}$	I	Detection input from the disc in detect sensor (Q501) "H": disc in
59	$\overline{\text{MID SENSOR}}$	I	Detection input from the tray close detect sensor (IC501) "H": tray closed
60	————	I	Not used (fixed at "L")
61	AVSS	–	Ground terminal (for A/D converter)
62	TEST	I	Test input terminal (fixed at "L" in this set)
63	————	O	Not used (open)
64	AVREF0	I	Reference voltage (+5V) input terminal (for D/A converter)
65	SRDT	I	Serial data input terminal from the CD text decoder (IC104)
66	————	O	Not used (open)
67	SCLK	O	Clock signal output terminal to the CD text decoder (IC104)
68	SUBQ	I	Subcode Q data input from the CXD2519Q (IC103) in CD section
69	————	O	Not used (open)
70	SQCLK	O	Clock signal output terminal to the CXD2519Q (IC103) in CD section
71	XMODE	O	Reset/power down mode setting output terminal to the CD text decoder (IC104)
72	SENSE2	I	Monitor input from the CXA1992AR (IC101) inside status
73	SENSE	I	Monitor input from the CXD2519Q (IC103) inside status
74	DRVDAT	O	Serial data output terminal to display Not used (open)
75	DRVCLK	O	Clock signal output terminal to display Not used (open)
76 to 83	A0 to A7	O	Address signal output terminal to the S-RAM (IC601)
84 to 91	D0 to D7	I/O	Two way data bus to the S-RAM (IC601)
92 to 98	A8 to A14	O	Address signal output terminal to the S-RAM (IC601)
99	A15	O	Address signal output terminal to external device Not used (open)
100	VSS	–	Ground terminal

*1 CD loading motor (M502) control

Operation / Terminal	IN	OUT	BRAKE	RUN IDLE
$\overline{\text{LD IN}}$ (pin ⑮)	"L"	"H"	"H"	"L"
$\overline{\text{LD OUT}}$ (pin ⑭)	"H"	"L"	"H"	"L"

*2 CD elevator UP/DOWN motor (M501) control

Operation / Terminal	UP	DOWN	BRAKE	RUN IDLE
$\overline{\text{STKUP}}$ (pin ⑰)	"L"	"H"	"H"	"L"
$\overline{\text{STKDOWN}}$ (pin ⑯)	"H"	"L"	"H"	"L"

• MAIN BOARD IC400 µPD780016YGF-021-3BA (SYSTEM CONTROLLER)

Pin No.	Pin Name	I/O	Function
1 to 8	————	O	Not used (open)
9	VPP	—	Ground terminal
10	X2	O	Main system clock output terminal (5 MHz)
11	X1	I	Main system clock input terminal (5 MHz)
12	VDD (B/U)	—	Power supply terminal (+5V) (for back up)
13	XT2	O	Sub system clock output terminal (32.768 kHz)
14	XT1	I	Sub system clock input terminal (32.768 kHz)
15	$\overline{\text{RESET}}$	I	System reset signal input terminal from the reset signal generator (IC401) For several hundreds msec. after the power supply rises, "L" is input, then it changes to "H"
16	AUB-IN	I	Audio bus signal input terminal
17	AUB-OUT	O	Audio bus signal output terminal
18	YBCLK0	O	Clock signal output terminal to the master controller (IC500) and CD mechanism controller (IC600)
19	YBCLKI	I	Clock signal input terminal to the master controller (IC500) and CD mechanism controller (IC600)
20	$\overline{\text{YBUS BSY}}$	I	Busy signal input from the master controller (IC500)
21	RDS CLK	I	Clock signal input from the RDS decoder (IC361) (AEP, UK, German, North European models only)
22	RDS DATA	I	Serial data input from the RDS decoder (IC361) (AEP, UK, German, North European models only)
23	VDD (B/U)	—	Power supply terminal (+5V) (for back up)
24	AVREF	I	Reference voltage (+5V) input terminal (for A/D converter)
25	KEY0	I	Key input terminal DIMMER key input (S701)
26	KEY1	I	Key input terminal POWER, GROOVE, DBFB key input (S700, 703, 704)
27	KEY2	I	Key input terminal CD1 to 3 ⏏, MD ⏏ key input (S705 to 707, 780)
28 to 31	————	—	Not used (fixed at "L")
32	$\overline{\text{AC CUT}}$	I	Power down detection input terminal "L": power down
33	AVSS	—	Ground terminal (for A/D converter)
34	————	O	Not used (open)
35	FL-DATA	O	Serial data output to the fluorescent indicator tube driver (IC700)
36	FL-CLK	O	Clock signal output to the fluorescent indicator tube driver (IC700)
37	$\overline{\text{FL-CS}}$	O	Chip select signal output to the fluorescent indicator tube driver (IC700)
38	$\overline{\text{AC ON}}$	O	Reset signal output to the fluorescent indicator tube driver (IC700) and LED driver (IC701) "L": reset
39	————	O	Not used (open)
40	VSS	—	Ground terminal
41	ISIRCS	I	Remote commander signal input from the SIRCS/infrared remote control select switch (IC703)
42	WSIRCS	I	Wired SIRCS signal input from detachable controller (RM-MD515)
43	LED LAT	O	Serial data latch pulse signal output to the LED driver (IC701)
44	LED DATA	O	Serial data output to the LED driver (IC701)
45	LED CLK	O	Clock data output to the LED driver (IC701)
46	427 LAT	O	Serial data latch pulse signal output to the M62427FP-A (IC111)
47	427 DATA	O	Serial data output to the M62427FP-A (IC111)
48	427 CLK	O	Clock signal output to the M62427FP-A (IC111)
49	4052 INH	O	INH output to the function switch (IC100)
50, 51	————	O	Not used (open)
52	————	I	Not used (fixed at "L")
53, 54	————	O	Not used (open)
55, 56	N-CH O/D	I	Not used (fixed at "L")
57 to 60	SUFFIX	I	Input terminal for the set model setting *1
61 to 64	————	I	Not used (fixed at "L")
65	EWS IN	I	Monitor input from external device Not used (fixed at "H")

Pin No.	Pin Name	I/O	Function
66	EWS OUT	O	Standby signal output to external device Not used (open)
67	$\overline{\text{STBY}}$	I	Not used (fixed at “H”)
68	$\overline{\text{EWS WARN}}$	I	Not used (fixed at “H”)
69	$\overline{\text{EWS TEST}}$	I	Not used (fixed at “H”)
70	————	O	Not used (open)
71	VSS	—	Ground terminal
72, 73	————	O	Not used (open)
74	$\overline{\text{RELAY ON}}$	O	Control signal output for speaker protect relay drive “L”: relay ON
75	STK MUTE	O	Mute control signal output terminal for speaker “H”: mute ON
76	$\overline{\text{DBFB HIGH}}$	O	DBFB control signal output to the M62427FP-A (IC111) “L”: DBFB HIGH, “H”: DBFB NORM/OFF
77	$\overline{\text{POWER ON}}$	O	Power ON/OFF control signal output for audio section “L”: power ON, “H”: standby
78	POWER ON	O	Power ON/OFF control signal output terminal Not used (open)
79	$\overline{\text{TA MUTE}}$	O	Line mute control signal output “L”: mute ON
80, 81	————	—	Not used (open)
82 to 85	BUSD0 to BUSD3	I/O	Two way data bus to the master controller (IC500) and CD mechanism controller (IC600)
86 to 90	————	O	Not used (open)
91	PCL OUT	O	Not used (open)
92	SOFT TEST	O	Not used (open)
93	ST-CLK	O	Clock signal output to PLL circuit in the tuner unit
94	ST-DIN	I	Serial data input from PLL circuit in the tuner unit
95	ST-DOUT	O	Serial data output to PLL circuit in the tuner unit
96	ST-CE	O	Chip enable signal output to PLL circuit in the tuner unit
97	TUNED	I	Tuning indication signal input from the tuner unit
98	STEREO	I	Stereo indication signal input from the tuner unit
99	ST MUTE	O	Mute control signal output to the tuner unit
100	————	O	Not used (open)

*1 The set model setting

Model / Terminal	US	AEP, UK, German, North European	Malaysia, Singapore, Hong Kong	Tourist
SUFFIX (pin ⑤⑦)	“L”	open	“L”	open
SUFFIX (pin ⑤⑧)	open	“L”	“L”	“L”
SUFFIX (pin ⑤⑨)	open	“L”	“L”	open
SUFFIX (pin ⑥⓪)	open	open	“L”	“L”

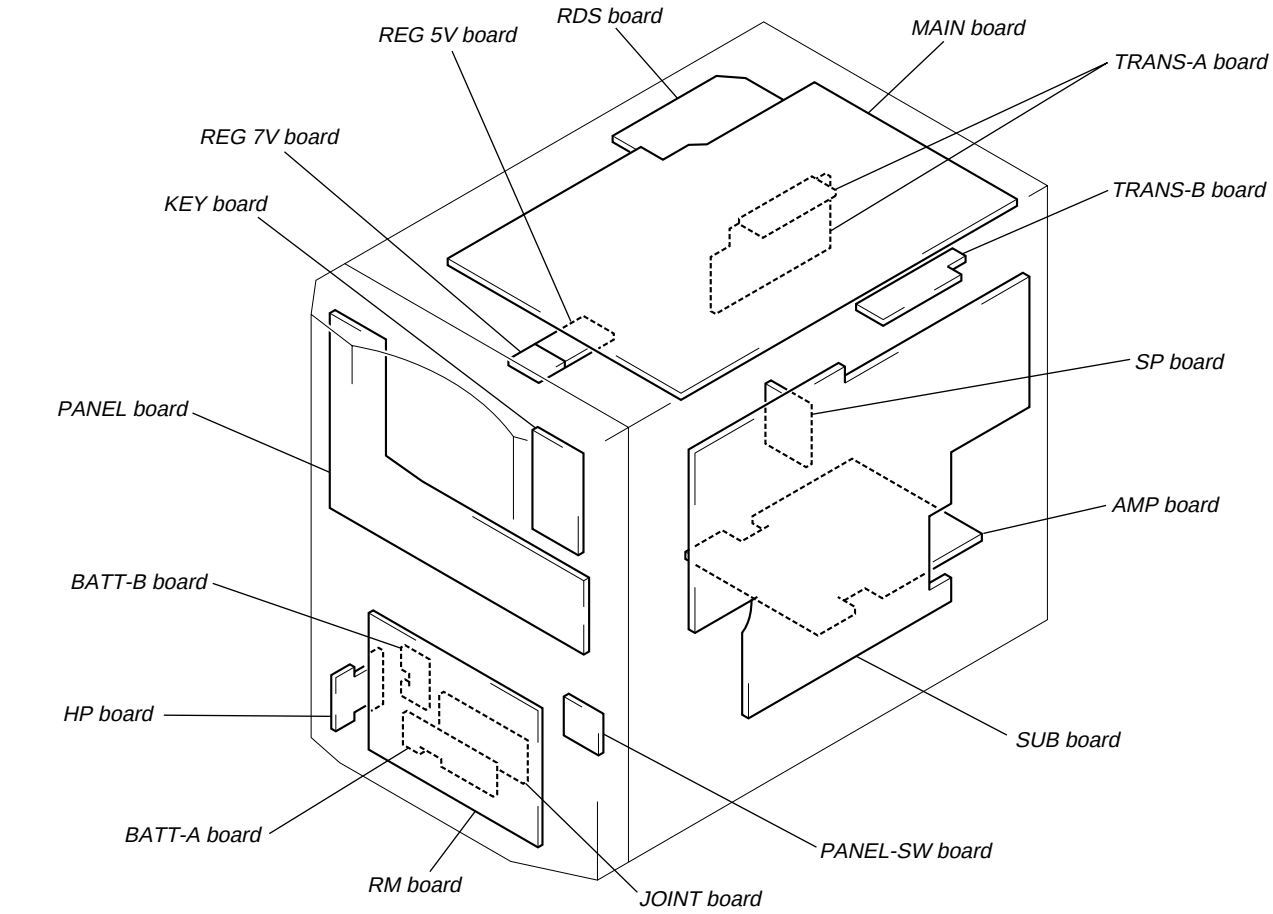
• RM BOARD IC1 MB89191PF-195 (KEY CONTROLLER)

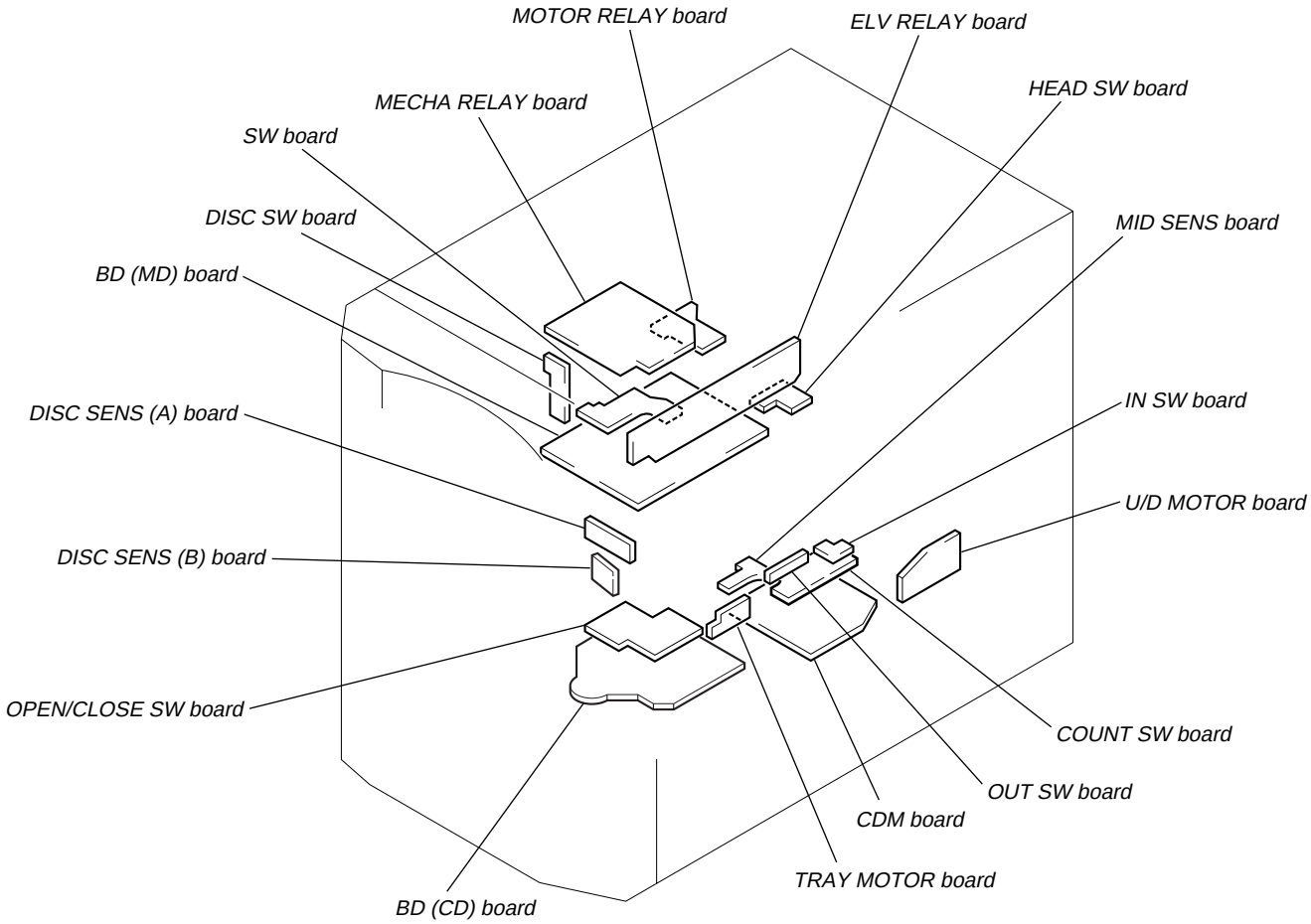
Pin No.	Pin Name	I/O	Function
1 to 3	IN4 to IN6	I	Key input terminal "L": active *1
4	EXT	I	Detection input from power source (HCD-MD515/dry battery) "H": HCD-MD515, "L": dry battery Fix at "H" to the LED OUT (pin ⑩) when "H"
5	———	I	Not used (fixed at "L")
6	$\overline{\text{RESET}}$	I	Reset signal input from external circuit when the EXT (pin ④) status changed
7	XO	O	Main system clock output terminal (3 MHz)
8	XI	I	Main system clock input terminal (3 MHz)
9	VSS	—	Ground terminal
10	$\overline{\text{LED OUT}}$	O	SIRCS signal output to the infrared emitter (D1) "L": active Fixed at "H" when the EXT (pin ④) is "H"
11	$\overline{\text{SIRCS}}$	O	Wired SIRCS signal output to the HCD-MD515 "L": active
12	VOL A	I	JOG dial pulse input from rotary encoder (RV2)
13	JOG A	I	JOG dial pulse input from rotary encoder (RV1)
14	VOL B	I	JOG dial pulse input from rotary encoder (RV2)
15	JOG B	I	JOG dial pulse input from rotary encoder (RV1)
16, 17	———	I	Not used (fixed at "L")
18 to 21	OUT0 to OUT3	O	Key output terminal "L": active *1
22, 23	———	I	Not used (fixed at "L")
24 to 27	IN0 to IN3	I	Key input terminal "L": active *1
28	VCC	—	Power supply terminal (+2.4V)

*1 Key matrix

	OUT 0 (pin⑱)	OUT 1(pin⑲)	OUT 2 (pin⑳)	OUT 3 (pin㉑)
IN 0 (pin㉔)	REC/CD-MD SYNC	REC IT	DISC SKIP	CD LOOP
IN 1 (pin㉕)	◀◀	▶▶	—	MD/CD 3
IN 2 (pin㉖)	EDIT/NO	ENTER/YES	TAPE	MD
IN 3 (pin㉗)	POWER	PRESET EQ	TIMER SET	TIMER SELECT
IN 4 (pin①)	■	▶II	MD/CD 2	MD/CD 1
IN 5 (pin②)	DISP	FUNCTION	BAND, TUNER	CD
IN 6 (pin③)	STEREO/MONO REPEAT	PRESET PROGRAM	AUTO SHUFFLE	MANUAL CONTINUE

• Circuit Boards Location





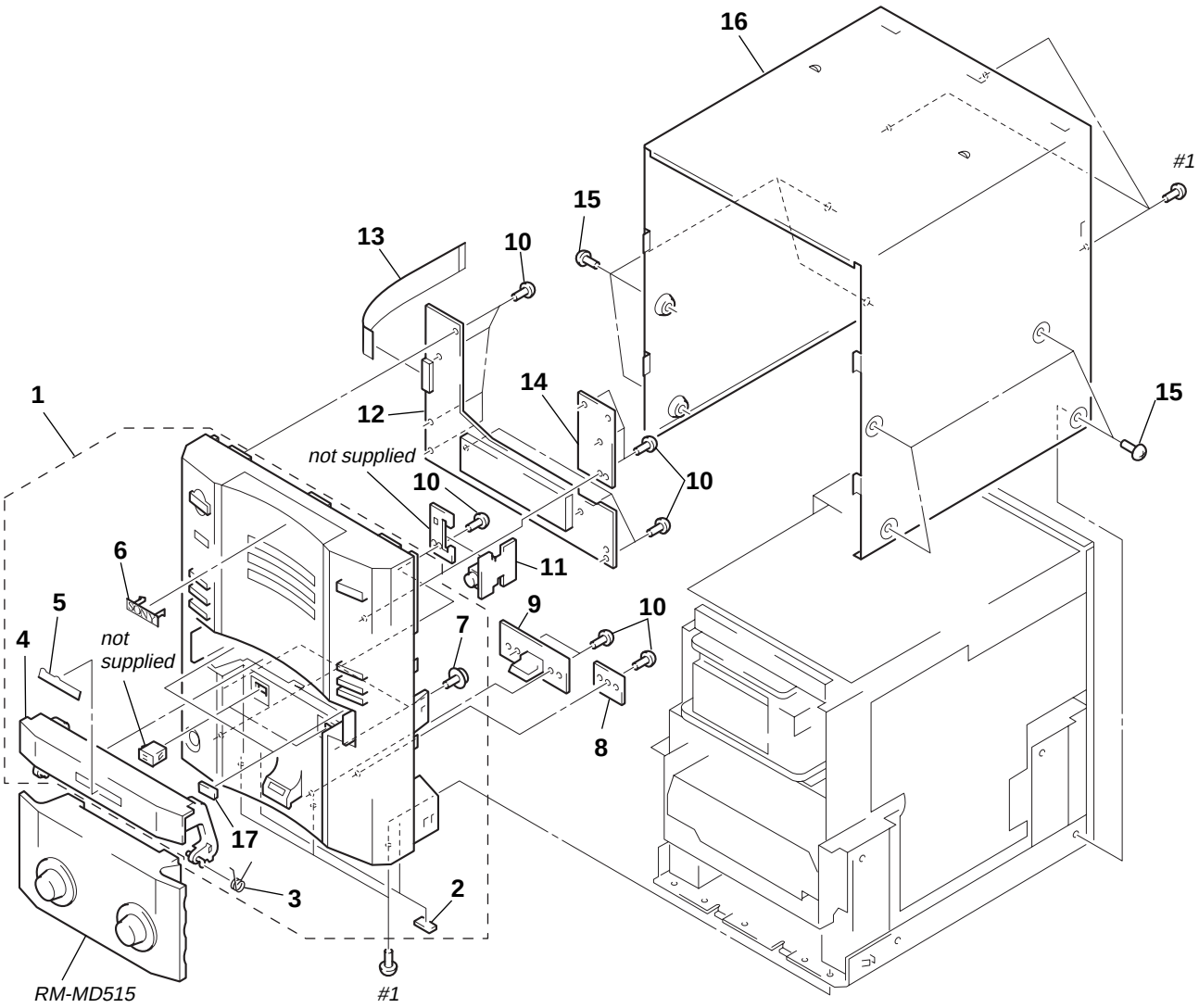
SECTION 7
EXPLODED VIEWS

NOTE:

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Abbreviation
  AED : North European JE : Tourist
  G : German MY : Malaysia
  HK : Hong Kong SP : Singapore
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list is given in the last of the electrical parts list.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

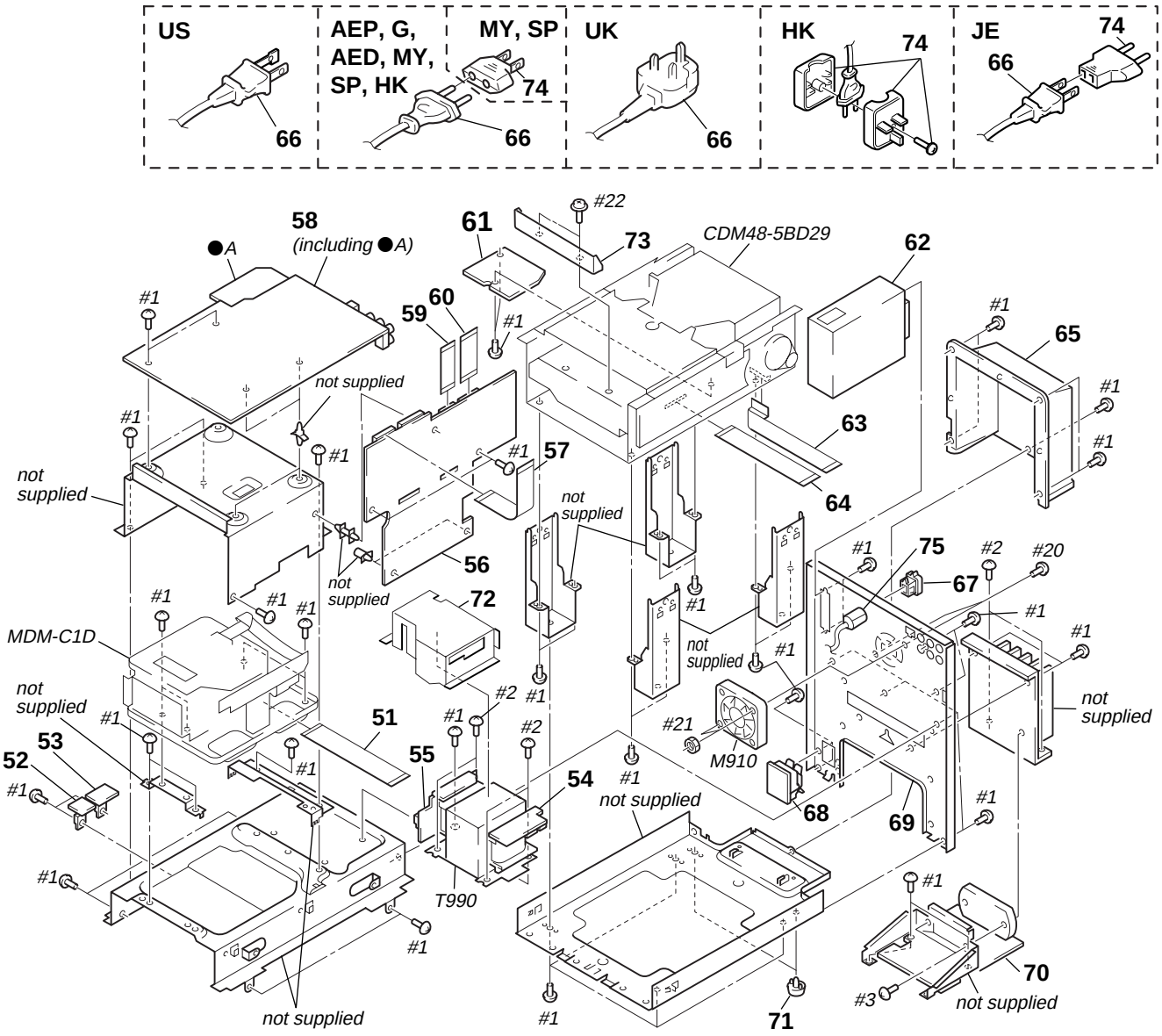
(1) CASE, FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
1	X-4948-949-1	PANEL ASSY, FRONT (US, MY, SP, HK, JE)	
1	X-4949-305-1	PANEL ASSY, FRONT (AEP, UK, G, AED)	
* 2	4-930-336-71	FOOT (FELT)	
3	4-993-618-01	SPRING (CD), TORSION	
4	4-993-606-01	LID (CD)	
5	4-993-616-01	EMBLEM (CD)	
6	4-962-708-01	EMBLEM (4-A), SONY	
7	4-933-134-11	SCREW (+PTPWH M2.6X8)	
* 8	1-667-076-11	PANEL-SW BOARD	
* 9	1-667-075-11	JOINT BOARD	
10	4-951-620-01	SCREW (2.6X8), +BVTP	
* 11	1-667-073-11	HP BOARD	
* 12	A-4403-366-A	PANEL BOARD, COMPLETE	
13	1-773-116-11	WIRE (FLAT TYPE) (19 CORE) (170 mm)	
* 14	1-667-070-11	KEY BOARD	
15	3-363-099-11	SCREW (CASE 3 TP2)	
* 16	4-993-622-11	CASE	
17	4-993-617-01	CUSHION (CD)	

(2) CHASSIS SECTION

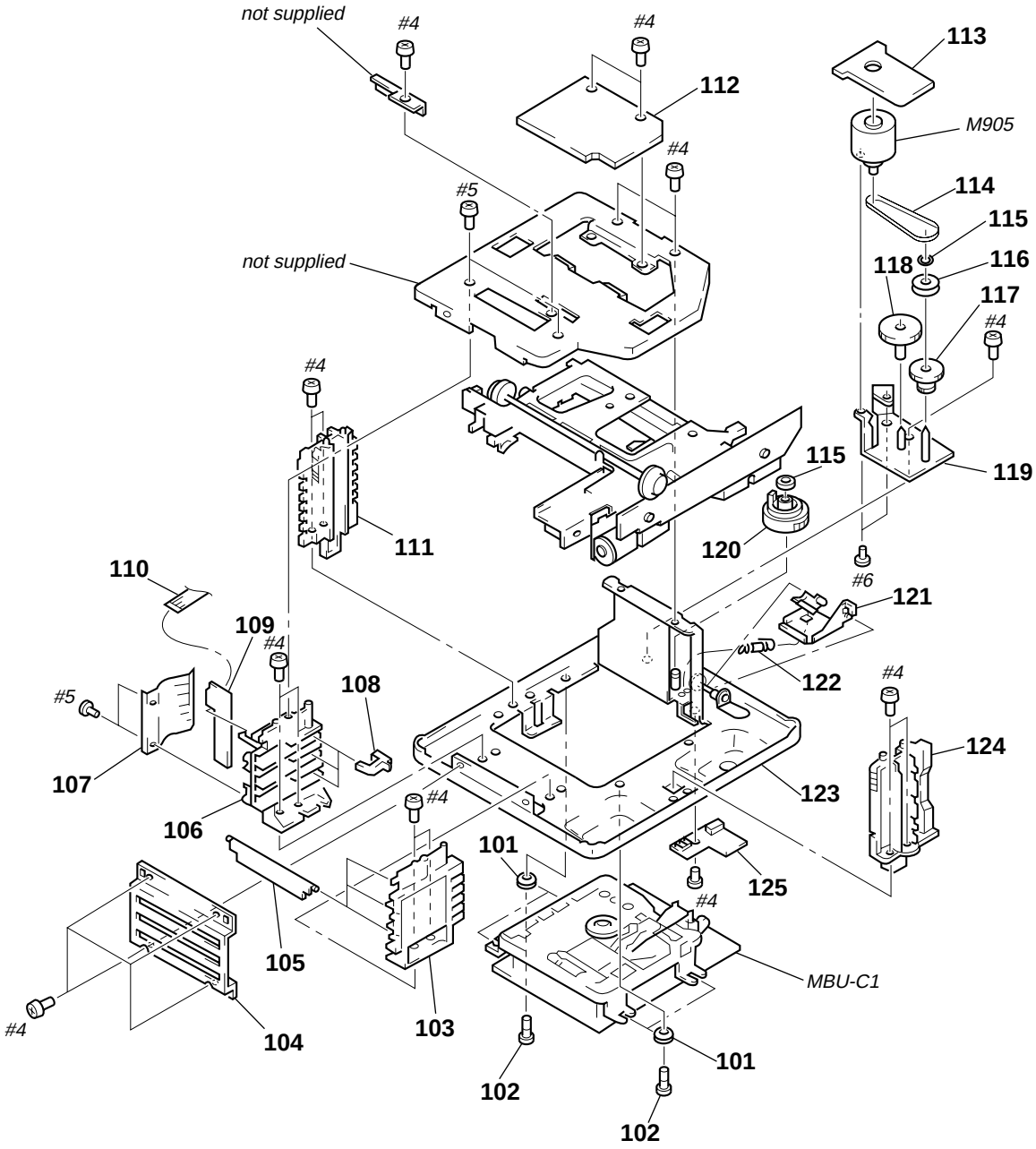
● A: RDS board



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
51	1-782-938-11	WIRE (FLAT TYPE) (23 CORE) (200 mm)	
* 52	1-667-072-11	REG 7V BOARD	
* 53	1-667-071-11	REG 5V BOARD	
* 54	1-667-080-11	TRANS-B BOARD	
* 55	1-667-079-11	TRANS-A BOARD	
* 56	A-4403-375-A	SUB BOARD, COMPLETE (EXCEPT US)	
* 56	A-4403-376-A	SUB BOARD, COMPLETE (US)	
57	1-782-937-11	WIRE (FLAT TYPE) (17 CORE) (130 mm)	
* 58	A-4403-362-A	MAIN BOARD, COMPLETE (AEP, UK, G, AED)	
* 58	A-4403-363-A	MAIN BOARD, COMPLETE (MY, SP, HK)	
* 58	A-4403-364-A	MAIN BOARD, COMPLETE (US)	
* 58	A-4407-369-A	MAIN BOARD, COMPLETE (JE)	
59	1-769-937-11	WIRE (FLAT TYPE) (11 CORE)	
60	1-773-105-11	WIRE (FLAT TYPE) (19 CORE) (70 mm)	
* 61	1-667-082-11	CDM BOARD	
62	1-233-544-21	ENCAPSULATED COMPONENT (FM/AM TUNER UNIT) (US)	
62	1-233-546-21	ENCAPSULATED COMPONENT (FM/AM TUNER UNIT) (MY, SP, HK, JE)	
62	1-693-387-21	TUNER (FM/MW/LW) (AEP, UK, G, AED)	
63	1-782-940-11	WIRE (FLAT TYPE) (17 CORE) (200 mm)	
64	1-782-941-11	WIRE (FLAT TYPE) (23 CORE) (230 mm)	
* 65	4-993-620-01	COVER (BACK)	
⚠66	1-558-943-41	CORD, POWER (JE)	
⚠66	1-575-042-21	CORD, POWER (US)	
⚠66	1-575-651-21	CORD, POWER (AEP, G, AED, MY, SP, HK)	
⚠66	1-696-571-11	CORD, POWER (UK)	
67	3-703-244-00	BUSHING (2104), CORD (EXCEPT US)	
* 67	3-703-571-11	BUSHING (S) (4516), CORD (US)	
* 68	1-667-081-11	SP BOARD	
* 69	4-993-619-11	PANEL, BACK (AEP, UK, G, AED)	
* 69	4-993-619-21	PANEL, BACK (MY, SP)	
* 69	4-993-619-31	PANEL, BACK (HK)	
* 69	4-993-619-41	PANEL, BACK (US)	
* 69	4-993-619-61	PANEL, BACK (JE)	
* 70	A-4403-378-A	AMP BOARD, COMPLETE (EXCEPT US)	
* 70	A-4403-379-A	AMP BOARD, COMPLETE (US)	
71	4-993-867-01	FOOT (8)	
* 72	4-997-129-01	COVER (TRANS)	
* 73	4-996-281-01	PLATE (CDM), ORNAMENTAL	
⚠74	1-569-007-11	ADAPTOR, CONVERSION 2P (JE)	
⚠74	1-569-008-11	ADAPTOR, CONVERSION 2P (MY, SP)	
⚠74	1-770-019-11	ADAPTOR, CONVERSION PLUG 3P (HK)	
75	1-543-798-11	FILTER, CLAMP (FERRITE CORE)	
M910	1-698-997-11	FAN, DC	
⚠T990	1-431-513-11	TRANSFORMER, POWER (AEP, UK, G, AED)	
⚠T990	1-431-514-11	TRANSFORMER, POWER (US)	
⚠T990	1-431-515-11	TRANSFORMER, POWER (MY, SP, HK, JE)	

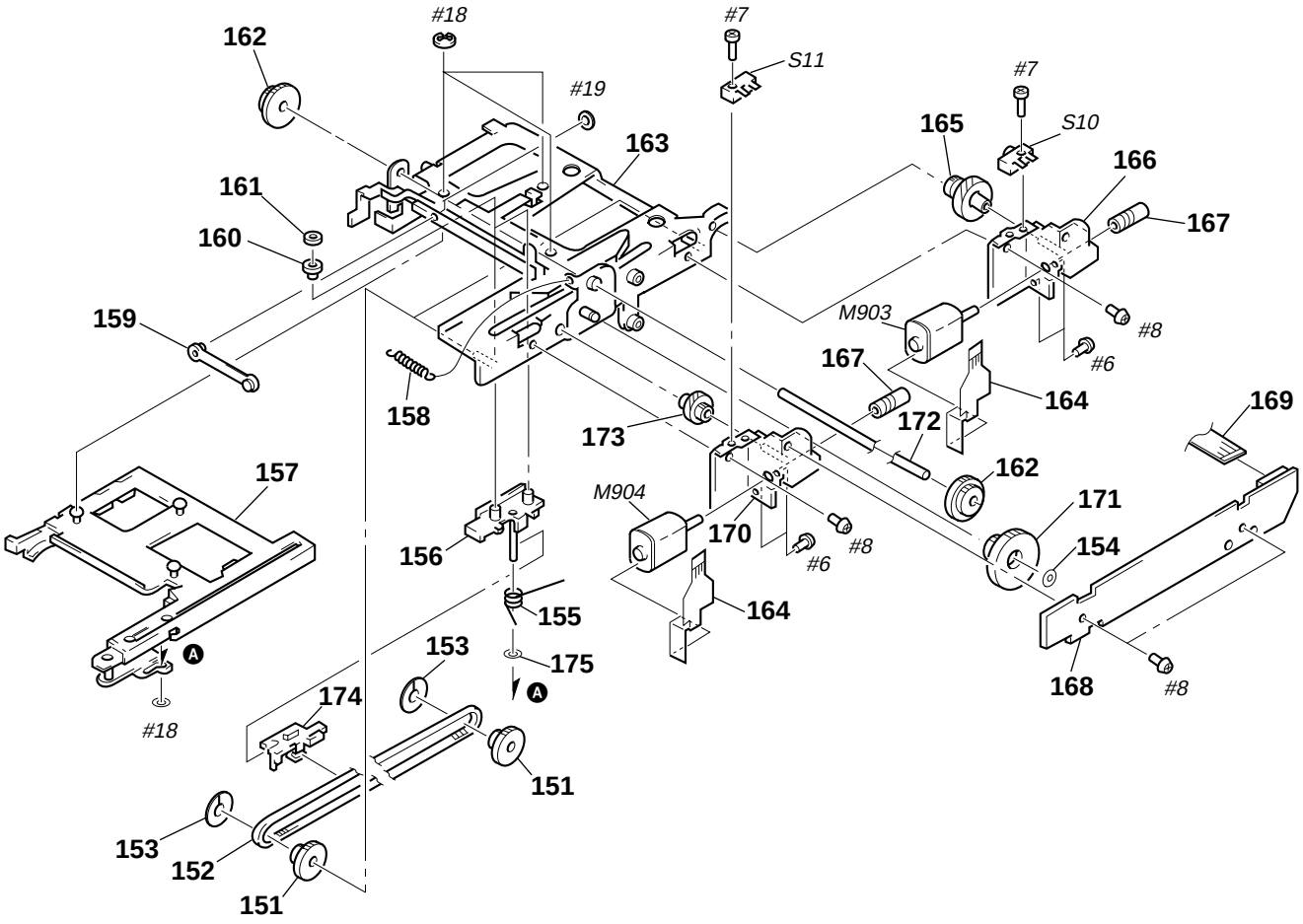
(3) MD MECHANISM DECK SECTION-1 (MDM-C1D)



Ref. No.	Part No.	Description	Remark
101	4-987-327-01	INSULATOR	
102	4-987-240-01	SCREW, STEP	
* 103	4-994-631-01	HOLDER (RN)	
* 104	4-994-633-01	HOLDER (FN)	
105	4-994-629-01	DOOR	
106	4-994-632-01	HOLDER (LN)	
107	4-986-934-01	SPRING (LOCK), LEAF	
* 108	4-995-805-01	LOCK (N)	
* 109	1-667-393-11	DISC SW BOARD	
110	1-782-910-11	WIRE (FLAT TYPE) (7 CORE)	
111	4-988-375-01	RACK (L)	
* 112	1-667-396-11	MECHA RELAY BOARD	
* 113	1-667-633-11	MOTOR RELAY BOARD	

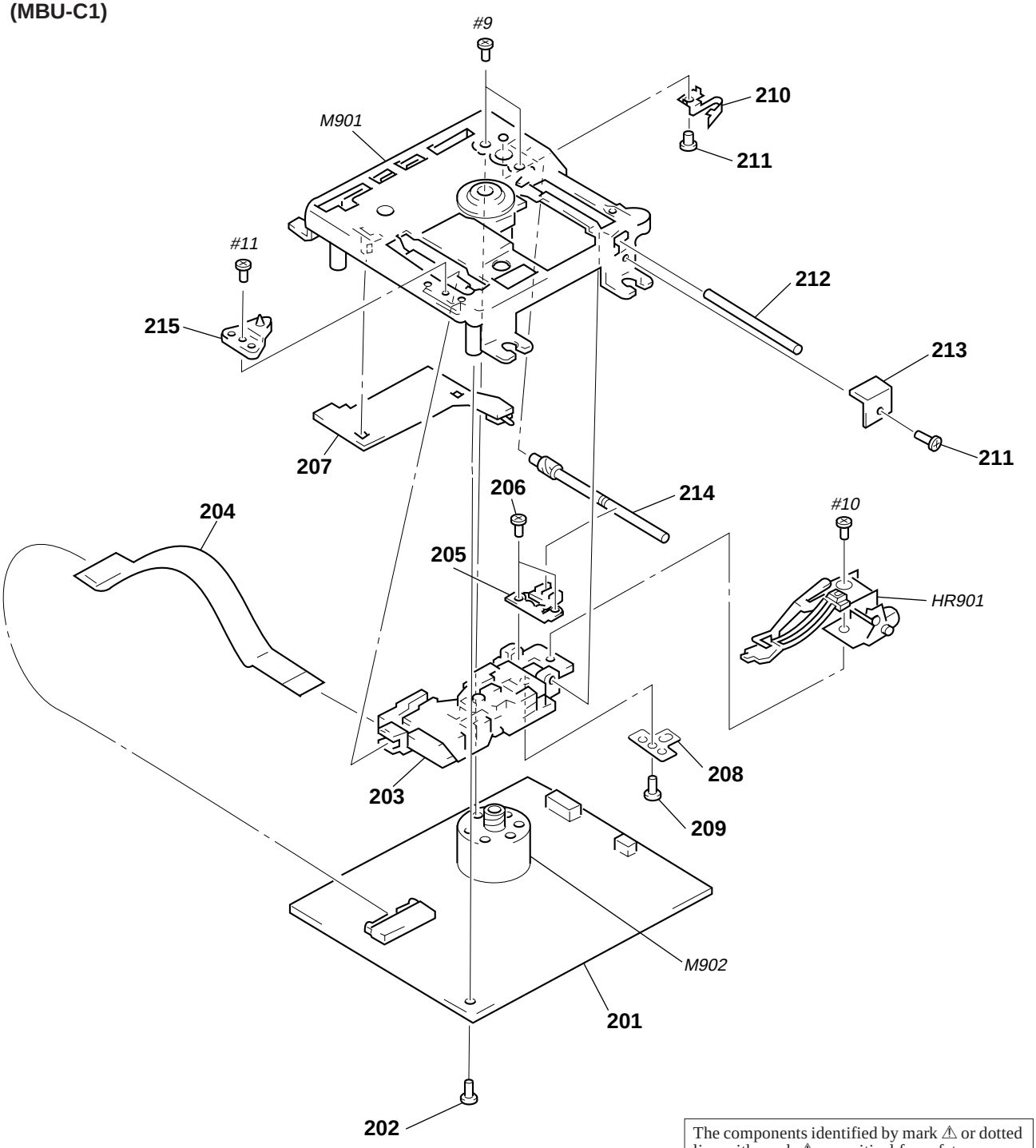
Ref. No.	Part No.	Description	Remark
114	3-661-080-00	BELT, (A)	
115	3-701-438-21	WASHER (E-2.3), NYLON	
116	3-018-636-01	GEAR (PULLEY) (C)	
117	3-018-203-01	GEAR (HEAD) (A)	
118	3-018-204-01	GEAR (HEAD) (B)	
119	X-3374-348-1	CHASSIS (HEAD GEAR) ASSY	
120	4-987-242-01	GEAR (CAM)	
* 121	4-987-241-01	LEVER (H)	
122	4-987-239-01	SPRING (3), TENSION	
123	X-4947-927-1	CHASSIS (BASE) ASSY	
124	4-994-630-01	RACK (RN)	
* 125	1-667-395-11	HEAD SW BOARD	
M905	X-4949-160-1	MOTOR (HEAD) ASSY (OVER WRITE HEAD UP/DOWN)	

(4) MD MECHANISM DECK SECTION-2 (MDM-C1D)



Ref. No.	Part No.	Description	Remark
151	4-986-951-01	GEAR (4)	
152	4-987-243-01	BELT	
153	4-986-947-01	STOPPER	
154	3-701-438-21	WASHER (E-2.3), NYLON	
155	4-987-236-01	SPRING, TORSION	
156	X-4947-932-1	SLIDER (2) ASSY	
157	X-3374-359-1	HOLDER (1H) ASSY	
158	4-987-238-01	SPRING (2), TENSION	
159	X-4948-193-1	LEVER (S) ASSY	
160	4-987-111-01	ROLLER (2)	
161	3-307-948-11	WASHER, NYLON	
162	4-986-952-01	GEAR (5)	
163	X-4949-171-1	CHASSIS (ELEVATOR) (NEW) ASSY	
164	1-667-955-11	FLEXIBLE BOARD	
165	4-986-948-01	GEAR (1)	
166	X-4949-225-1	BRACKET (1BN) ASSY	
167	4-986-953-01	WORM	
* 168	1-667-394-11	ELV RELAY BOARD	
169	1-782-909-11	WIRE (FLAT TYPE) (13 CORE)	
170	X-4947-928-1	BRACKET (1A) ASSY	
171	4-986-950-01	GEAR (3)	
172	4-987-244-01	SHAFT (1)	
173	4-986-949-01	GEAR (2)	
174	4-987-235-02	CLAMPER (B)	
175	3-326-162-02	WASHER, POLYETHYLENE	
M903	1-698-874-11	MOTOR, DC (LOADING)	
M904	1-698-874-11	MOTOR, DC (ELEVATOR UP/DOWN)	
S10	1-762-904-11	SWITCH, PUSH (1 KEY) (LOADING IN DETECT)	
S11	1-762-952-11	SWITCH, PUSH (1 KEY) (LOADING OUT DETECT)	

(5) MD BASE UNIT SECTION (MBU-C1)

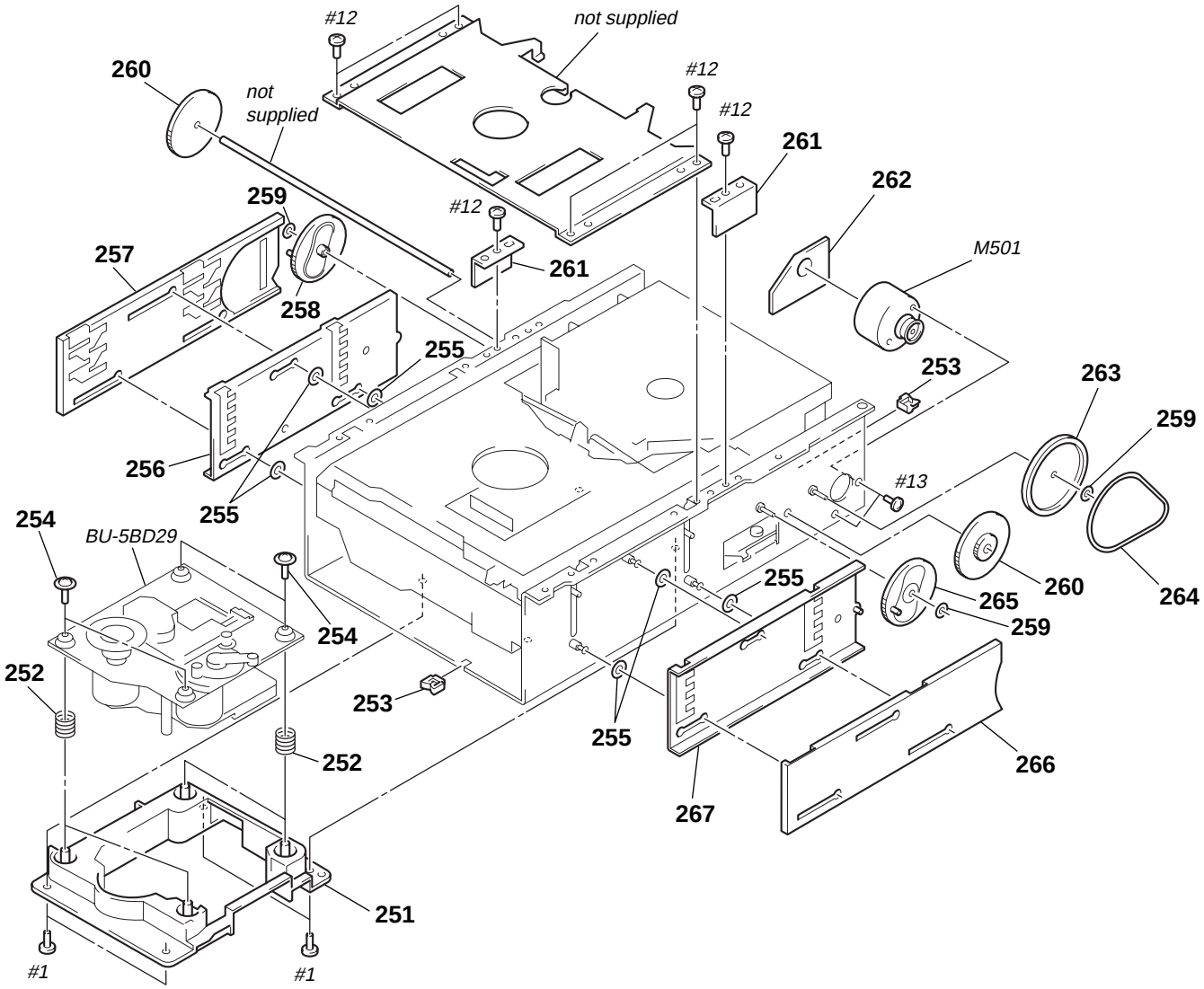


The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
* 201	A-4699-823-A	BD (MD) BOARD, COMPLETE	
202	3-348-383-01	SCREW (M2X6.0), +B TAPPING	
⚠203	8-583-028-02	OPTICAL PICK-UP KMS-260A/J1N (for MD)	
204	1-664-039-11	OP TRANSLATION FLEXIBLE BOARD	
205	4-963-914-02	RACK (INSERTER)	
206	3-366-890-11	SCREW (M1.4)	
* 207	1-667-392-11	SW BOARD	
208	4-987-061-01	SPACER (RACK)	
209	4-955-841-11	SCREW	

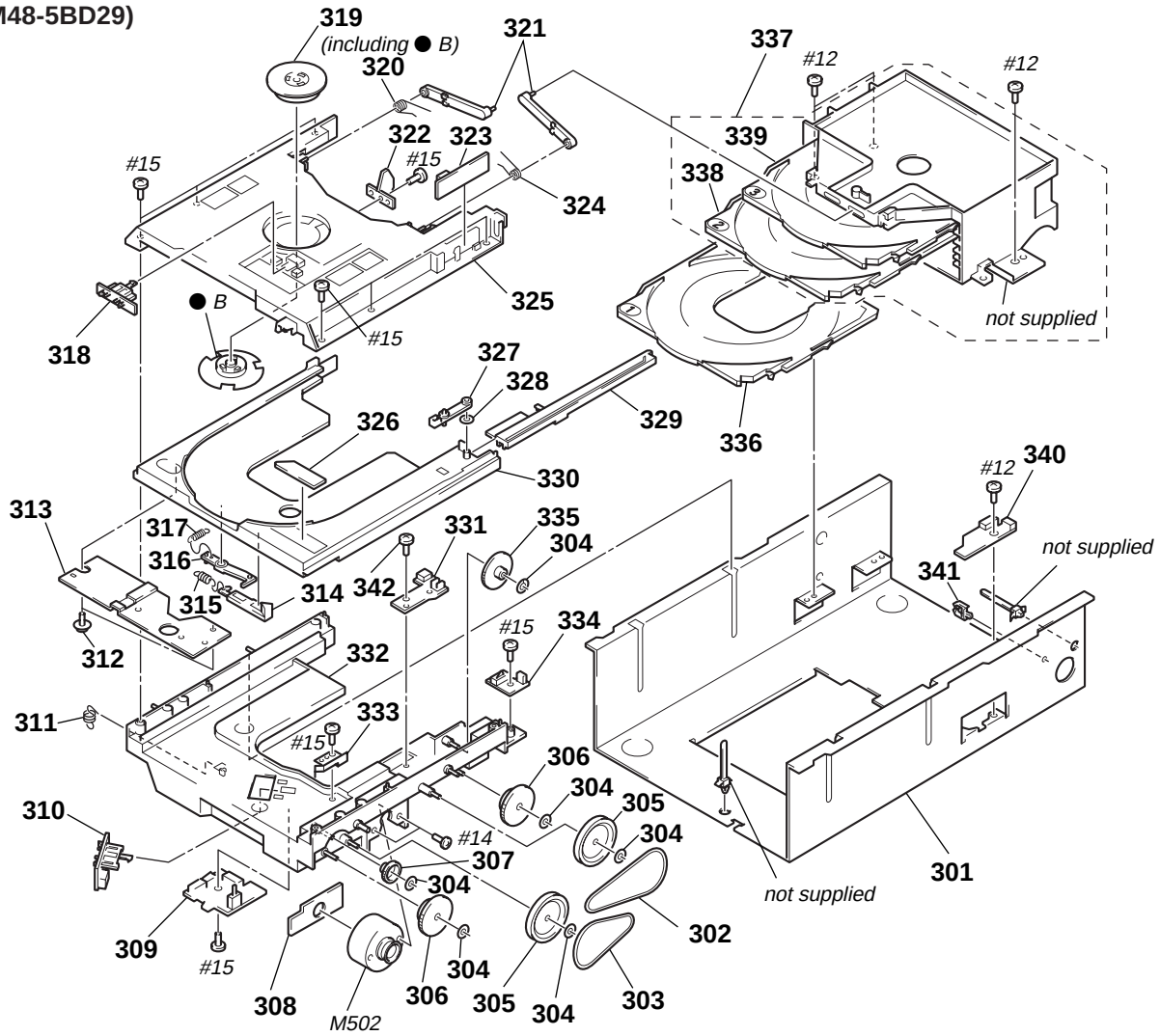
Ref. No.	Part No.	Description	Remark
210	4-979-906-11	SPRING (LEAD SCREW)	
211	3-342-375-11	SCREW (M1.7X1.4), SPECIAL	
* 212	4-988-702-01	SHAFT (MAIN)	
* 213	4-988-484-01	STOPPER	
214	A-3304-200-A	SCREW ASSY, LEAD	
* 215	4-983-511-02	PIN (OUTSERT)	
HR901	1-500-489-11	HEAD, OVER WRITE	
M901	A-4672-241-A	MOTOR ASSY, SPINDLE	
M902	A-4672-240-A	MOTOR ASSY, SLED	

(6) CD MECHANISM DECK SECTION-1 (CDM48-5BD29)



Ref. No.	Part No.	Description	Remark
* 251	4-993-146-01	HOLDER, BU	
252	4-948-503-01	SPRING (BU), COMPRESSION	
253	3-383-699-01	CLAMP (EDGE)	
254	4-985-672-01	SCREW (+PTPWHM2.6), FLOATING	
255	4-965-882-01	SPACER	
256	X-4948-778-1	SLIDER (DRIVING CAM L) ASSY	
* 257	4-993-104-01	CAM (L), PLATE	
258	4-964-468-01	GEAR (CAM L)	
259	4-957-798-01	WASHER, STOPPER	
260	4-964-466-01	GEAR (JOINT)	
* 261	4-967-875-01	REINFORCEMENT (PLATE CAM)	
* 262	1-651-396-11	U/D MOTOR BOARD	
263	4-964-487-01	PULLEY (U/D)	
264	4-996-408-01	BELT (U/D)	
265	4-964-467-01	GEAR (CAM R)	
* 266	4-993-105-01	CAM (R), PLATE	
267	X-4948-779-1	SLIDER (DRIVING CAM R) ASSY	
M501	X-4949-299-1	MOTOR ASSY (CDM48 U/D) (ELEVATOR UP/DOWN)	

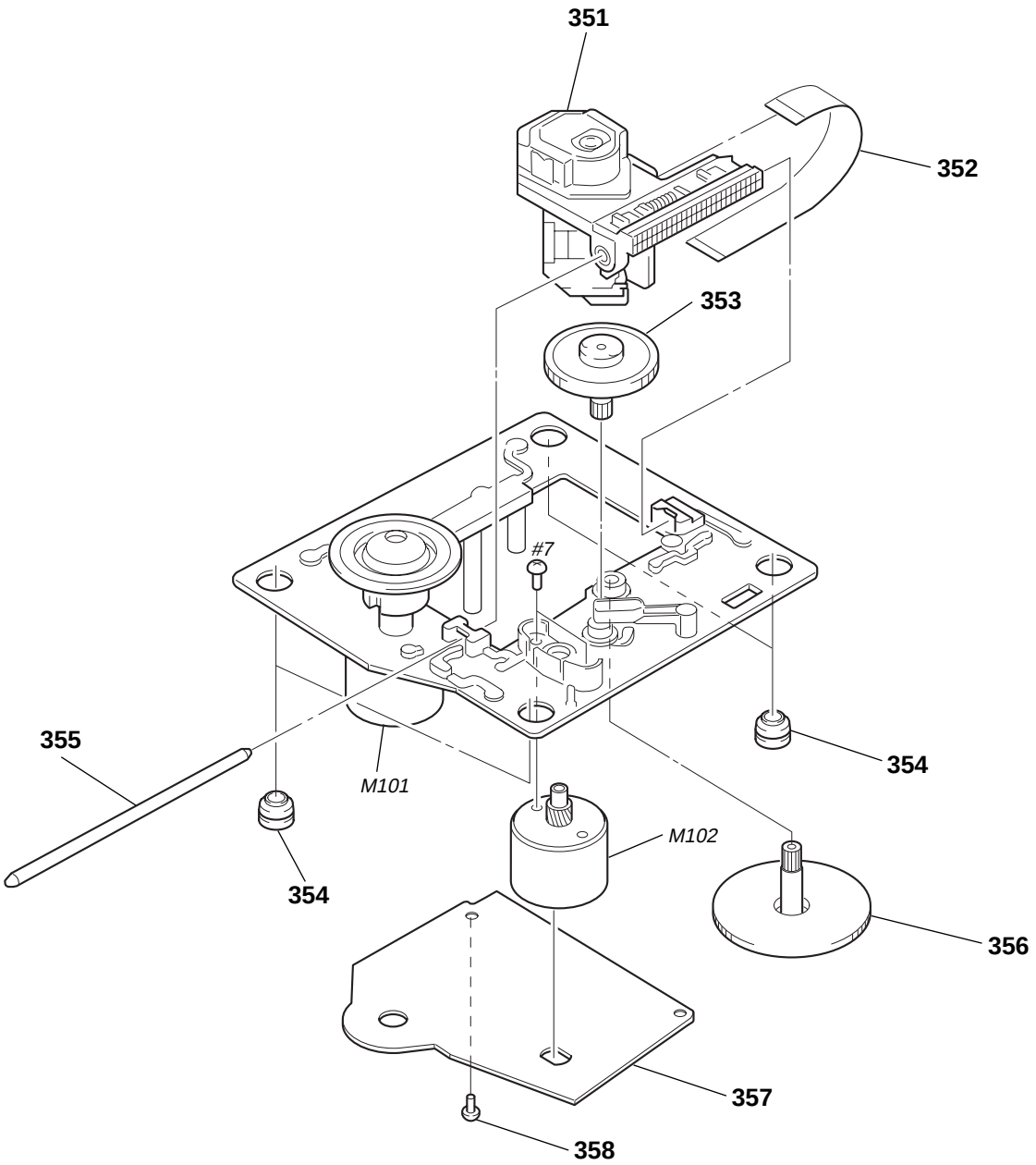
(7) CD MECHANISM DECK SECTION-2 (CDM48-5BD29)



Ref. No.	Part No.	Description	Remark
* 301	X-4948-784-1	CHASSIS ASSY, SUB	
302	4-964-476-01	BELT (R)	
303	3-319-030-01	BELT (MIDWAY)	
304	4-957-798-01	WASHER, STOPPER	
305	4-964-465-01	PULLEY (TRAY)	
306	4-964-464-01	GEAR (DECELERATION)	
307	4-964-462-01	GEAR (TRAY F)	
* 308	1-651-391-11	TRAY MOTOR BOARD	
* 309	1-651-394-11	OPEN/CLOSE SW BOARD	
* 310	1-651-399-11	DISC SENS (B) BOARD	
311	4-996-098-01	SPRING (L), TENSION	
312	4-933-134-01	SCREW (+PTPWH M2.6X6)	
* 313	4-964-473-02	BRACKET (LEVER RETAINER)	
314	4-964-458-01	SLIDER (CLICK)	
315	4-964-481-01	SPRING (A), TENSION	
316	4-964-459-01	LEVER (STOPPER)	
317	4-964-482-01	SPRING (B), TENSION	
* 318	1-651-398-11	DISC SENS (A) BOARD	
319	1-452-719-11	MAGNET ASSY	
320	4-964-485-01	SPRING (LEVER L), TORSION	
* 321	4-964-460-01	LEVER (STOCK)	
322	4-993-145-01	STOPPER	

Ref. No.	Part No.	Description	Remark
* 323	1-651-392-11	OUT SW BOARD	
324	4-964-484-01	SPRING (LEVER R), TORSION	
325	4-964-492-01	BASE (MAGNET), FITTING	
326	4-972-864-11	EMBLEM (MAIN TRAY)	
327	X-4944-659-1	LEVER (GOOSENECK) ASSY	
328	3-701-439-21	WASHER	
329	4-964-455-01	SLIDER (SELECTION)	
330	4-964-453-01	TRAY (MAIN)	
* 331	1-651-393-11	MID SENS BOARD	
332	X-4944-557-1	BASE (TRAY) ASSY, FITTING	
333	4-967-196-01	SPRING (CLICK), LEAF	
* 334	1-651-395-11	IN SW BOARD	
335	4-964-463-01	GEAR (TRAY R)	
336	X-4944-823-1	TRAY (SUB NO.1) ASSY	
337	A-4672-428-A	STOCKER ASSY	
338	X-4944-824-1	TRAY (SUB NO.2) ASSY	
339	X-4944-825-1	TRAY (SUB NO.3) ASSY	
* 340	1-651-397-11	COUNT SW BOARD	
341	4-962-113-01	CLAMP	
342	4-951-620-01	SCREW (2.6X8), +BVTP	
M502	X-4944-463-1	MOTOR ASSY (LOADING)	

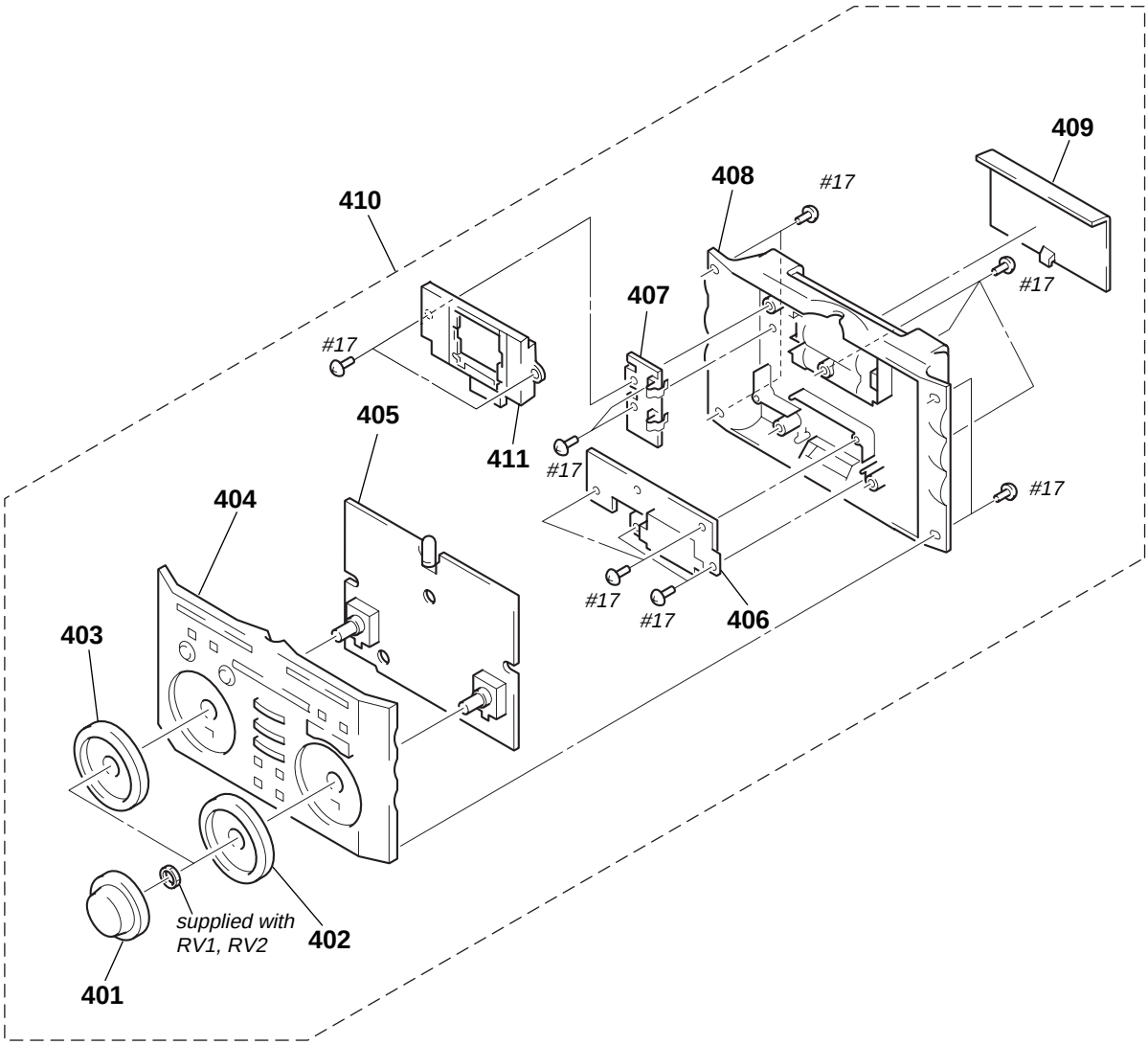
(8) CD BASE UNIT SECTION (BU-5BD29)



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
⚠351	8-848-379-31	OPTICAL PICK-UP KSS-213BA/F-NP (for CD)	
352	1-769-069-11	WIRE (FLAT TYPE) (16 CORE)	
353	4-917-567-01	GEAR (M)	
354	4-951-940-01	INSULATOR (BU)	
355	4-917-565-01	SHAFT, SLED	
356	4-917-564-01	GEAR (P), FLATNESS	
* 357	A-4699-295-A	BD (CD) BOARD, COMPLETE	
358	4-951-620-01	SCREW (2.6X8), +BVTP	
M101	X-4917-523-4	MOTOR ASSY (SPINDLE)	

(9) DETACHABLE CONTROLLER (REMOTE COMMANDER) SECTION (RM-MD515)



Ref. No.	Part No.	Description	Remark
M102	X-4917-504-1	MOTOR ASSY (SLED)	
401	4-993-631-01	KNOB (VOL)	
402	4-993-632-01	ORNAMENT (RING VOL)	
403	4-994-291-01	ORNAMENT (RING JOG)	
404	X-4948-924-1	CABINET (FRONT) ASSY	
* 405	A-4403-359-A	RM BOARD, COMPLETE	
* 406	1-667-085-11	BATT-A BOARD	
* 407	1-667-086-11	BATT-B BOARD	
408	X-4948-925-1	CABINET (REAR) ASSY	
409	4-993-633-01	LID, BATTERY CASE	
410	A-4332-232-A	RM-MD515	
411	4-995-727-01	COVER (BATTERY CASE)	

SECTION 8
ELECTRICAL PARTS LIST

AMP

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL: Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F: nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u: µ, for example:
  uA. . : µA. . uPA. . : µPA. .
  uPB. . : µPB. . uPC. . : µPC. .
  uPD. . : µPD. .
- CAPACITORS
  uF: µF
- COILS
  uH: µH
- Abbreviation
  AED : North European JE : Tourist
  G : German MY : Malaysia
  HK : Hong Kong SP : Singapore

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
*	A-4403-378-A	AMP BOARD, COMPLETE			
		**********			
	1-533-293-11	FUSE HOLDER			
		< CAPACITOR >			
C801	1-126-051-11	ELECT	47uF	20%	50V
C802	1-162-282-31	CERAMIC	100PF	10%	50V
C803	1-126-051-11	ELECT	47uF	20%	50V
C805	1-126-051-11	ELECT	47uF	20%	50V
C807	1-126-965-11	ELECT	22uF	20%	50V
C808	1-136-165-00	FILM	0.1uF	5%	50V
C809	1-136-165-00	FILM	0.1uF	5%	50V
C830	1-126-933-11	ELECT	100uF	20%	10V
C831	1-126-923-11	ELECT	220uF	20%	10V
C832	1-126-933-11	ELECT	100uF	20%	10V
C839	1-126-052-11	ELECT	100uF	20%	50V
C851	1-126-051-11	ELECT	47uF	20%	50V
C852	1-162-282-31	CERAMIC	100PF	10%	50V
C853	1-126-051-11	ELECT	47uF	20%	50V
C854	1-126-051-11	ELECT	47uF	20%	50V
C855	1-126-052-11	ELECT	100uF	20%	50V
C856	1-164-159-11	CERAMIC	0.1uF		50V
C858	1-136-165-00	FILM	0.1uF	5%	50V
C859	1-136-165-00	FILM	0.1uF	5%	50V
C891	1-117-922-11	ELECT	4700uF	20%	42V
C892	1-117-922-11	ELECT	4700uF	20%	42V
C893	1-136-165-00	FILM	0.1uF	5%	50V
C894	1-136-165-00	FILM	0.1uF	5%	50V
		< CONNECTOR >			
* CN800	1-568-949-11	PIN, CONNECTOR 11P			
* CN801	1-564-518-11	PLUG, CONNECTOR 3P			
* CN802	1-564-519-11	PLUG, CONNECTOR 4P			
		< DIODE >			
D801	8-719-987-63	DIODE 1N4148M			
D802	8-719-987-63	DIODE 1N4148M			
D830	8-719-987-63	DIODE 1N4148M			
D851	8-719-987-63	DIODE 1N4148M			
D852	8-719-987-63	DIODE 1N4148M			
D891	8-719-025-03	DIODE RBA-402-SL			

Ref. No.	Part No.	Description			Remark
		< FUSE >			
F801		FUSE (4A/250V) (US)			
F801	1-532-504-31	FUSE, TIME-LAG (4A/250V) (EXCEPT US)			
F802		FUSE (4A/250V) (US)			
F802	1-532-504-31	FUSE, TIME-LAG (4A/250V) (EXCEPT US)			
		< IC >			
IC801	8-749-900-96	IC STK-4142MK2			
		< COIL >			
L109	1-420-872-00	COIL, AIR-CORE			
L159	1-420-872-00	COIL, AIR-CORE			
		< TRANSISTOR >			
Q801	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA			
Q830	8-729-620-05	TRANSISTOR 2SC2603-EF			
Q831	8-729-620-05	TRANSISTOR 2SC2603-EF			
Q832	8-729-620-05	TRANSISTOR 2SC2603-EF			
Q833	8-729-422-61	TRANSISTOR UN4115			
Q834	8-729-422-73	TRANSISTOR UN4212			
Q835	8-729-422-61	TRANSISTOR UN4115			
Q851	8-729-140-84	TRANSISTOR 2SC1841-PAFAEA			
		< RESISTOR >			
R109	1-260-076-11	CARBON	10	5%	1/2W
R159	1-260-076-11	CARBON	10	5%	1/2W
R801	1-249-416-11	CARBON	820	5%	1/4W
R802	1-249-438-11	CARBON	56K	5%	1/4W
R803	1-249-416-11	CARBON	820	5%	1/4W
R804	1-249-438-11	CARBON	56K	5%	1/4W
R805	1-260-103-11	CARBON	2.2K	5%	1/2W
R806	1-260-103-11	CARBON	2.2K	5%	1/2W
R807	1-260-099-11	CARBON	1K	5%	1/2W
R808	1-260-099-11	CARBON	1K	5%	1/2W
⚠R809	1-212-881-11	FUSIBLE	100	5%	1/4W F
⚠R810	1-217-151-00	RES, METAL PLATE 0.22		10%	2W F
R811	1-249-417-11	CARBON	1K	5%	1/4W
R812	1-249-431-11	CARBON	15K	5%	1/4W
R813	1-249-441-11	CARBON	100K	5%	1/4W
R814	1-260-076-11	CARBON	10	5%	1/2W
R815	1-249-431-11	CARBON	15K	5%	1/4W

AMP **BATT-A** **BATT-B** **BD (CD)**

Ref. No.	Part No.	Description			Remark
R830	1-249-431-11	CARBON	15K	5%	1/4W
R831	1-249-425-11	CARBON	4.7K	5%	1/4W
⚠R832	1-247-749-11	CARBON	560	5%	1/2W F
R833	1-249-417-11	CARBON	1K	5%	1/4W
R834	1-249-429-11	CARBON	10K	5%	1/4W
R835	1-249-425-11	CARBON	4.7K	5%	1/4W
R836	1-249-439-11	CARBON	68K	5%	1/4W
R837	1-249-437-11	CARBON	47K	5%	1/4W
R838	1-249-417-11	CARBON	1K	5%	1/4W
R839	1-249-441-11	CARBON	100K	5%	1/4W
R840	1-249-417-11	CARBON	1K	5%	1/4W
R841	1-260-097-11	CARBON	680	5%	1/2W
R842	1-260-097-11	CARBON	680	5%	1/2W
R843	1-260-097-11	CARBON	680	5%	1/2W
R844	1-260-097-11	CARBON	680	5%	1/2W
R845	1-249-429-11	CARBON	10K	5%	1/4W
R851	1-249-416-11	CARBON	820	5%	1/4W
R852	1-249-438-11	CARBON	56K	5%	1/4W
R853	1-249-416-11	CARBON	820	5%	1/4W
R854	1-249-438-11	CARBON	56K	5%	1/4W
R855	1-260-103-11	CARBON	2.2K	5%	1/2W
R856	1-260-103-11	CARBON	2.2K	5%	1/2W
⚠R857	1-202-972-61	FUSIBLE	1	5%	1/4W F
⚠R859	1-212-881-11	FUSIBLE	100	5%	1/4W F
⚠R860	1-217-151-00	RES, METAL PLATE	0.22	10%	2W F
R861	1-249-417-11	CARBON	1K	5%	1/4W
R862	1-249-431-11	CARBON	15K	5%	1/4W
R863	1-249-441-11	CARBON	100K	5%	1/4W
R864	1-260-076-11	CARBON	10	5%	1/2W
R865	1-249-431-11	CARBON	15K	5%	1/4W
		< RELAY >			
RY800	1-515-920-11	RELAY (24V)			

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*	1-667-085-11	BATT-A BOARD			
		**********			
		< CHIP CONDUCTOR >			
L1	1-216-296-00	CONDUCTOR, CHIP (3216)			

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*	1-667-086-11	BATT-B BOARD			
		**********			
	1-779-905-11	SOCKET, CONNECTOR			
	4-969-086-01	TERMINAL BOARD, BATTERY			
		< CONNECTOR >			
* CN2	1-568-954-11	PIN, CONNECTOR 5P			

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*	A-4699-295-A	BD (CD) BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C101	1-126-607-11	ELECT CHIP	47uF	20%	4V
C102	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V
C103	1-164-346-11	CERAMIC CHIP	1uF		16V
C105	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C106	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C107	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C108	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C109	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C110	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C111	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C112	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C113	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C114	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C115	1-126-607-11	ELECT CHIP	47uF	20%	4V
C116	1-163-016-00	CERAMIC CHIP	0.0039uF	10%	50V
C117	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C118	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C119	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C120	1-124-779-00	ELECT CHIP	10uF	20%	16V
C121	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C122	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C123	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C124	1-126-607-11	ELECT CHIP	47uF	20%	4V
C125	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C126	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C127	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C128	1-163-135-00	CERAMIC CHIP	560PF	5%	50V
C129	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C130	1-164-336-11	CERAMIC CHIP	0.33uF		25V
C131	1-164-346-11	CERAMIC CHIP	1uF		16V
C140	1-110-501-11	CERAMIC CHIP	0.33uF	10%	16V
C154	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C161	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C162	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C163	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C164	1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V
C165	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C166	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C167	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C168	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C169	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C170	1-163-099-00	CERAMIC CHIP	18PF	5%	50V
C171	1-163-237-11	CERAMIC CHIP	27PF	5%	50V
C173	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C174	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C175	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C176	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C177	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C178	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C179	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C180	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C181	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C182	1-126-393-11	ELECT	33uF	20%	10V
C183	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C185	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C188	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C189	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
		< CONNECTOR >			
CNU101	1-770-014-11	CONNECTOR, FFC/FPC 16P			
CNU102	1-770-072-11	CONNECTOR,(LIF(NON-ZIF))FFC23P			

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description			Remark
		< FERRITE BEAD >			
FB101	1-414-234-11	INDUCTOR, FERRITE BEAD			
FB103	1-414-234-11	INDUCTOR, FERRITE BEAD			
		< IC >			
IC101	8-752-080-62	IC CXA1992AR			
IC102	8-759-429-32	IC BA5941FP-E2			
IC103	8-752-378-66	IC CXD2519Q			
IC104	8-759-428-57	IC LC89170M-TLM			
		< CHIP CONDUCTOR >			
JW102	1-216-295-00	CONDUCTOR, CHIP (2012)			
JW104	1-216-295-00	CONDUCTOR, CHIP (2012)			
		< TRANSISTOR >			
Q101	8-729-010-08	TRANSISTOR MSB710-R			
		< RESISTOR >			
R102	1-216-001-00	METAL CHIP	10	5%	1/10W
R104	1-216-093-00	METAL CHIP	68K	5%	1/10W
R105	1-216-088-00	METAL CHIP	43K	5%	1/10W
R106	1-216-088-00	METAL CHIP	43K	5%	1/10W
R107	1-216-088-00	METAL CHIP	43K	5%	1/10W
R108	1-216-088-00	METAL CHIP	43K	5%	1/10W
R109	1-216-093-00	METAL CHIP	68K	5%	1/10W
R114	1-216-101-00	METAL CHIP	150K	5%	1/10W
R115	1-216-101-00	METAL CHIP	150K	5%	1/10W
R116	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R117	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R118	1-216-063-91	METAL CHIP	3.9K	5%	1/10W
R119	1-216-085-00	METAL CHIP	33K	5%	1/10W
R120	1-216-089-91	METAL CHIP	47K	5%	1/10W
R121	1-216-114-00	METAL CHIP	510K	5%	1/10W
R122	1-216-097-91	METAL CHIP	100K	5%	1/10W
R123	1-216-099-00	METAL CHIP	120K	5%	1/10W
R124	1-216-091-00	METAL CHIP	56K	5%	1/10W
R125	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R126	1-216-063-91	METAL CHIP	3.9K	5%	1/10W
R127	1-216-089-91	METAL CHIP	47K	5%	1/10W
R128	1-216-098-00	METAL CHIP	110K	5%	1/10W
R129	1-216-025-91	METAL CHIP	100	5%	1/10W
R130	1-216-079-00	METAL CHIP	18K	5%	1/10W
R131	1-216-079-00	METAL CHIP	18K	5%	1/10W
R132	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R133	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R134	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R135	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R136	1-216-073-00	METAL CHIP	10K	5%	1/10W
R137	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R138	1-216-025-91	METAL CHIP	100	5%	1/10W
R156	1-216-081-00	METAL CHIP	22K	5%	1/10W
R157	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R158	1-216-001-00	METAL CHIP	10	5%	1/10W
R159	1-216-121-91	METAL CHIP	1M	5%	1/10W
R161	1-216-097-91	METAL CHIP	100K	5%	1/10W
R162	1-216-073-00	METAL CHIP	10K	5%	1/10W
R163	1-216-121-91	METAL CHIP	1M	5%	1/10W
R164	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R165	1-216-049-11	METAL CHIP	1K	5%	1/10W
R166	1-216-073-00	METAL CHIP	10K	5%	1/10W
R167	1-216-081-00	METAL CHIP	22K	5%	1/10W
R168	1-216-073-00	METAL CHIP	10K	5%	1/10W
R169	1-216-079-00	METAL CHIP	18K	5%	1/10W
R170	1-216-081-00	METAL CHIP	22K	5%	1/10W
R171	1-216-073-00	METAL CHIP	10K	5%	1/10W
R172	1-216-079-00	METAL CHIP	18K	5%	1/10W
R173	1-216-025-91	METAL CHIP	100	5%	1/10W
R174	1-216-033-00	METAL CHIP	220	5%	1/10W
R175	1-216-025-91	METAL CHIP	100	5%	1/10W
R176	1-216-025-91	METAL CHIP	100	5%	1/10W
R177	1-216-025-91	METAL CHIP	100	5%	1/10W
R178	1-216-025-91	METAL CHIP	100	5%	1/10W
R179	1-216-025-91	METAL CHIP	100	5%	1/10W
R180	1-216-025-91	METAL CHIP	100	5%	1/10W
R181	1-216-025-91	METAL CHIP	100	5%	1/10W
R182	1-216-025-91	METAL CHIP	100	5%	1/10W
R183	1-216-025-91	METAL CHIP	100	5%	1/10W
R184	1-216-025-91	METAL CHIP	100	5%	1/10W
R185	1-216-025-91	METAL CHIP	100	5%	1/10W
R187	1-216-033-00	METAL CHIP	220	5%	1/10W
R188	1-216-037-00	METAL CHIP	330	5%	1/10W
R190	1-216-097-91	METAL CHIP	100K	5%	1/10W
R191	1-216-105-91	METAL CHIP	220K	5%	1/10W
		< SWITCH >			
S101	1-572-085-11	SWITCH, LEAF (LIMIT)			
		< VIBRATOR >			
X101	1-767-408-21	VIBRATOR, CRYSTAL (16.9344MHz)			
**********					
*	A-4699-823-A	BD (MD) BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C001	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C002	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C003	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C004	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C005	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C006	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C101	1-115-363-11	CERAMIC CHIP	10uF		10V
C102	1-107-682-11	CERAMIC CHIP	1uF	10%	16V
C103	1-115-363-11	CERAMIC CHIP	10uF		10V
C104	1-115-363-11	CERAMIC CHIP	10uF		10V
C105	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C106	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V
C107	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C108	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C109	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C110	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C111	1-164-344-11	CERAMIC CHIP	0.068uF	10%	25V
C112	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C113	1-107-682-11	CERAMIC CHIP	1uF	10%	16V
C115	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V

BD (MD)

Ref. No.	Part No.	Description			Remark
C116	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C117	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C118	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C119	1-115-363-11	CERAMIC CHIP	10uF		10V
C121	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C122	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C123	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C124	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C127	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C128	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C129	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C130	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C131	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V
C132	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C133	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C134	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C135	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C136	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C139	1-163-229-11	CERAMIC CHIP	12PF	5%	50V
C140	1-163-229-11	CERAMIC CHIP	12PF	5%	50V
C142	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C143	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C144	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C151	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C152	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C153	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C156	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C158	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C160	1-115-363-11	CERAMIC CHIP	10uF		10V
C161	1-115-363-11	CERAMIC CHIP	10uF		10V
C163	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C164	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C167	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C168	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C169	1-115-363-11	CERAMIC CHIP	10uF		10V
C171	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C181	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C182	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C183	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C184	1-117-962-11	SOLID CHIP	22uF	20%	6.3V
C185	1-164-611-11	CERAMIC CHIP	0.001uF	10%	500V
C188	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C189	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C190	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C191	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C192	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C197	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C201	1-164-695-11	CERAMIC CHIP	0.0022uF	5%	50V
C202	1-164-695-11	CERAMIC CHIP	0.0022uF	5%	50V
C203	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C205	1-115-363-11	CERAMIC CHIP	10uF		10V
C206	1-115-363-11	CERAMIC CHIP	10uF		10V
C207	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C208	1-115-363-11	CERAMIC CHIP	10uF		10V
C209	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C210	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C212	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C213	1-115-363-11	CERAMIC CHIP	10uF		10V
C214	1-115-363-11	CERAMIC CHIP	10uF		10V
C215	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C216	1-115-363-11	CERAMIC CHIP	10uF		10V
C350	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C351	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C352	1-126-204-11	ELECT CHIP	47uF	20%	16V
C353	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C354	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C355	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C357	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C358	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C359	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C360	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C361	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C362	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C363	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
		< CONNECTOR >			
CN101	1-766-508-11	CONNECTOR, FFC/FPC (ZIF) 22P			
CN104	1-766-898-21	HOUSING, CONNECTOR(PC BOARD)4P			
CN107	1-770-072-11	CONNECTOR,(LIF(NON-ZIF))FFC23P			
CN108	1-750-499-21	PIN, CONNECTOR (PC BOARD) 5P			
* CN109	1-750-494-31	PIN, CONNECTOR (PC BOARD) 6P			
		< DIODE >			
D101	8-719-988-62	DIODE 1SS355			
D181	8-719-046-86	DIODE F1J6TP			
D183	8-719-046-86	DIODE F1J6TP			
		< IC >			
IC101	8-752-080-95	IC CXA2523AR			
IC121	8-752-384-47	IC CXD2652AR			
IC124	8-759-334-38	IC MSM51V4400-70TS-K			
IC152	8-759-430-25	IC BH6511FS-E2			
IC171	8-759-428-58	IC XL24C01AF-E2			
IC172	8-759-040-83	IC BA6287F			
IC181	8-759-481-17	IC MC74ACT08DTR2			
IC192	8-759-460-72	IC BA033FP			
IC201	8-759-471-38	IC AK4520A-VF-E2			
IC316	8-759-480-92	IC M30610MC-102FP			
		< COIL >			
L001	1-414-813-11	INDUCTOR			
L002	1-414-813-11	INDUCTOR			
L003	1-414-813-11	INDUCTOR			
L004	1-414-813-11	INDUCTOR			
L008	1-500-445-21	INDUCTOR			
L101	1-414-813-11	INDUCTOR			
L102	1-414-813-11	INDUCTOR			
L103	1-414-813-11	INDUCTOR			
L105	1-414-813-11	INDUCTOR			
L106	1-414-813-11	INDUCTOR			
L122	1-414-813-11	INDUCTOR			
L151	1-412-622-51	INDUCTOR 10uH			
L152	1-412-622-51	INDUCTOR 10uH			
L153	1-412-039-51	INDUCTOR CHIP 100uH			
L154	1-412-039-51	INDUCTOR CHIP 100uH			
L161	1-414-813-11	INDUCTOR			

Ref. No.	Part No.	Description			Remark
L162	1-414-813-11	INDUCTOR			
L201	1-414-813-11	INDUCTOR			
L301	1-414-813-11	INDUCTOR			
L351	1-414-813-11	INDUCTOR			
		< TRANSISTOR >			
Q101	8-729-028-91	TRANSISTOR	DTA144EUA-T106		
Q102	8-729-026-53	TRANSISTOR	2SA1576A-T106-QR		
Q103	8-729-028-99	TRANSISTOR	RN1307-TE85L		
Q104	8-729-028-99	TRANSISTOR	RN1307-TE85L		
Q113	8-729-903-10	TRANSISTOR	FMW1		
Q162	8-729-101-07	TRANSISTOR	2SB798-DL		
Q163	8-729-028-91	TRANSISTOR	DTA144EUA-T106		
Q181	8-729-018-75	TRANSISTOR	2SJ278MY		
Q182	8-729-017-65	TRANSISTOR	2SK1764KY		
		< RESISTOR/CHIP CONDUCTOR >			
R100	1-216-121-00	METAL CHIP	1M	5%	1/10W
R101	1-216-047-00	METAL CHIP	820	5%	1/10W
R103	1-216-049-11	METAL CHIP	1K	5%	1/10W
R104	1-216-073-00	METAL CHIP	10K	5%	1/10W
R105	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R106	1-216-133-00	METAL CHIP	3.3M	5%	1/10W
R107	1-216-113-00	METAL CHIP	470K	5%	1/10W
R110	1-216-073-00	METAL CHIP	10K	5%	1/10W
R112	1-216-089-00	METAL CHIP	47K	5%	1/10W
R113	1-216-049-11	METAL CHIP	1K	5%	1/10W
R115	1-216-049-11	METAL CHIP	1K	5%	1/10W
R117	1-216-113-00	METAL CHIP	470K	5%	1/10W
R121	1-216-097-00	METAL CHIP	100K	5%	1/10W
R125	1-216-049-11	METAL CHIP	1K	5%	1/10W
R128	1-216-041-00	METAL CHIP	470	5%	1/10W
R131	1-216-073-00	METAL CHIP	10K	5%	1/10W
R132	1-216-097-00	METAL CHIP	100K	5%	1/10W
R133	1-216-117-00	METAL CHIP	680K	5%	1/10W
R134	1-216-049-11	METAL CHIP	1K	5%	1/10W
R135	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R136	1-216-049-11	METAL CHIP	1K	5%	1/10W
R137	1-216-025-00	METAL CHIP	100	5%	1/10W
R140	1-216-029-00	METAL CHIP	150	5%	1/10W
R142	1-216-073-00	METAL CHIP	10K	5%	1/10W
R143	1-216-073-00	METAL CHIP	10K	5%	1/10W
R144	1-216-025-00	METAL CHIP	100	5%	1/10W
R146	1-216-037-00	METAL CHIP	330	5%	1/10W
R147	1-216-025-00	METAL CHIP	100	5%	1/10W
R148	1-216-045-00	METAL CHIP	680	5%	1/10W
R158	1-216-097-00	METAL CHIP	100K	5%	1/10W
R159	1-216-097-00	METAL CHIP	100K	5%	1/10W
R160	1-216-295-00	CONDUCTOR, CHIP (2012)			
R161	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R162	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R163	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R164	1-216-033-00	METAL CHIP	220	5%	1/10W
R165	1-216-097-00	METAL CHIP	100K	5%	1/10W
R166	1-220-149-11	METAL CHIP	2.2	10%	1/2W
R167	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R169	1-219-724-11	METAL CHIP	1	1%	1/4W
R170	1-216-073-00	METAL CHIP	10K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R171	1-216-073-00	METAL CHIP	10K	5%	1/10W
R175	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R177	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R178	1-216-295-00	CONDUCTOR, CHIP (2012)			
R179	1-216-091-00	METAL CHIP	56K	5%	1/10W
R180	1-216-073-00	METAL CHIP	10K	5%	1/10W
R181	1-216-073-00	METAL CHIP	10K	5%	1/10W
R182	1-216-089-00	METAL CHIP	47K	5%	1/10W
R183	1-216-089-00	METAL CHIP	47K	5%	1/10W
R184	1-216-073-00	METAL CHIP	10K	5%	1/10W
R188	1-216-073-00	METAL CHIP	10K	5%	1/10W
R189	1-216-073-00	METAL CHIP	10K	5%	1/10W
R190	1-216-073-00	METAL CHIP	10K	5%	1/10W
R195	1-216-295-00	CONDUCTOR, CHIP (2012)			
R196	1-216-041-00	METAL CHIP	470	5%	1/10W
R198	1-216-295-00	CONDUCTOR, CHIP (2012)			
R199	1-216-295-00	CONDUCTOR, CHIP (2012)			
R200	1-216-295-00	CONDUCTOR, CHIP (2012)			
R201	1-219-724-11	METAL CHIP	1	1%	1/4W
R202	1-216-041-00	METAL CHIP	470	5%	1/10W
R203	1-216-025-00	METAL CHIP	100	5%	1/10W
R204	1-216-025-00	METAL CHIP	100	5%	1/10W
R210	1-216-041-00	METAL CHIP	470	5%	1/10W
R330	1-216-073-00	METAL CHIP	10K	5%	1/10W
R331	1-216-073-00	METAL CHIP	10K	5%	1/10W
R332	1-216-073-00	METAL CHIP	10K	5%	1/10W
R333	1-216-073-00	METAL CHIP	10K	5%	1/10W
R351	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R352	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R353	1-216-295-00	CONDUCTOR, CHIP (2012)			
R361	1-216-097-00	METAL CHIP	100K	5%	1/10W
R362	1-216-025-00	METAL CHIP	100	5%	1/10W
R363	1-216-097-00	METAL CHIP	100K	5%	1/10W
R366	1-216-097-00	METAL CHIP	100K	5%	1/10W
R367	1-216-097-00	METAL CHIP	100K	5%	1/10W
R379	1-216-073-00	METAL CHIP	10K	5%	1/10W
R380	1-216-073-00	METAL CHIP	10K	5%	1/10W
R381	1-216-073-00	METAL CHIP	10K	5%	1/10W
R382	1-216-073-00	METAL CHIP	10K	5%	1/10W
R383	1-216-073-00	METAL CHIP	10K	5%	1/10W
R384	1-216-073-00	METAL CHIP	10K	5%	1/10W
R385	1-216-073-00	METAL CHIP	10K	5%	1/10W
R386	1-216-073-00	METAL CHIP	10K	5%	1/10W
R391	1-216-073-00	METAL CHIP	10K	5%	1/10W
R393	1-216-073-00	METAL CHIP	10K	5%	1/10W
R400	1-216-073-00	METAL CHIP	10K	5%	1/10W
R420	1-216-097-00	METAL CHIP	100K	5%	1/10W
R421	1-216-097-00	METAL CHIP	100K	5%	1/10W
R422	1-216-097-00	METAL CHIP	100K	5%	1/10W
R423	1-216-097-00	METAL CHIP	100K	5%	1/10W
R424	1-216-097-00	METAL CHIP	100K	5%	1/10W
R425	1-216-097-00	METAL CHIP	100K	5%	1/10W
R429	1-216-097-00	METAL CHIP	100K	5%	1/10W
R430	1-216-097-00	METAL CHIP	100K	5%	1/10W
R431	1-216-097-00	METAL CHIP	100K	5%	1/10W
R433	1-216-097-00	METAL CHIP	100K	5%	1/10W
R434	1-216-097-00	METAL CHIP	100K	5%	1/10W
R435	1-216-097-00	METAL CHIP	100K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R436	1-216-097-00	METAL CHIP	100K	5%	1/10W
R437	1-216-097-00	METAL CHIP	100K	5%	1/10W
R438	1-216-073-00	METAL CHIP	10K	5%	1/10W
R439	1-216-073-00	METAL CHIP	10K	5%	1/10W
R440	1-216-073-00	METAL CHIP	10K	5%	1/10W
R441	1-216-097-00	METAL CHIP	100K	5%	1/10W
R442	1-216-097-00	METAL CHIP	100K	5%	1/10W
R443	1-216-097-00	METAL CHIP	100K	5%	1/10W
R444	1-216-097-00	METAL CHIP	100K	5%	1/10W
R445	1-216-097-00	METAL CHIP	100K	5%	1/10W
R446	1-216-097-00	METAL CHIP	100K	5%	1/10W
R447	1-216-097-00	METAL CHIP	100K	5%	1/10W
R448	1-216-097-00	METAL CHIP	100K	5%	1/10W
R449	1-216-097-00	METAL CHIP	100K	5%	1/10W
R451	1-216-097-00	METAL CHIP	100K	5%	1/10W
R452	1-216-097-00	METAL CHIP	100K	5%	1/10W
R453	1-216-097-00	METAL CHIP	100K	5%	1/10W
R454	1-216-097-00	METAL CHIP	100K	5%	1/10W
R455	1-216-097-00	METAL CHIP	100K	5%	1/10W
R456	1-216-097-00	METAL CHIP	100K	5%	1/10W
R457	1-216-097-00	METAL CHIP	100K	5%	1/10W
R458	1-216-097-00	METAL CHIP	100K	5%	1/10W
R460	1-216-073-00	METAL CHIP	10K	5%	1/10W
R463	1-216-073-00	METAL CHIP	10K	5%	1/10W
R502	1-216-295-00	CONDUCTOR, CHIP (2012)			
R504	1-216-295-00	CONDUCTOR, CHIP (2012)			
R602	1-216-025-00	METAL CHIP	100	5%	1/10W
R603	1-216-025-00	METAL CHIP	100	5%	1/10W
R604	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R605	1-216-025-00	METAL CHIP	100	5%	1/10W
R606	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R607	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R608	1-216-025-00	METAL CHIP	100	5%	1/10W
R617	1-216-025-00	METAL CHIP	100	5%	1/10W
R618	1-216-025-00	METAL CHIP	100	5%	1/10W
R619	1-216-025-00	METAL CHIP	100	5%	1/10W
R621	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R622	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R623	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R624	1-216-073-00	METAL CHIP	10K	5%	1/10W
R995	1-216-295-00	CONDUCTOR, CHIP (2012)			
R2000	1-216-025-00	METAL CHIP	100	5%	1/10W
R2001	1-216-295-00	CONDUCTOR, CHIP (2012)			
R2002	1-414-813-11	INDUCTOR, CHIP			
R2003	1-216-295-00	CONDUCTOR, CHIP (2012)			
		< VIBRATOR >			
X100	1-579-870-21	VIBRATOR, CRYSTAL (22.5792MHz)			
X302	1-767-670-11	VIBRATOR, CERAMIC (7MHz)			
**********					
*	1-667-082-11	CDM BOARD			
		**********			
		< CAPACITOR >			
C690	1-126-923-11	ELECT	220uF	20%	10V

Ref. No.	Part No.	Description			Remark
		< CONNECTOR >			
* CN690	1-568-836-11	SOCKET, CONNECTOR 17P			
* CN691	1-564-724-11	PIN, CONNECTOR (SMALL TYPE) 8P			
CN692	1-506-481-11	PIN, CONNECTOR 2P			
* CN693	1-568-941-11	PIN, CONNECTOR 3P			
* CN694	1-564-720-11	PIN, CONNECTOR (SMALL TYPE) 4P			
		< DIODE >			
D690	8-719-010-29	DIODE UZ-4.3BSB			
D691	8-719-010-38	DIODE UZ-5.1BSB			
		< IC >			
IC690	8-759-277-68	IC LB1648			
		< RESISTOR >			
R690	1-247-807-31	CARBON	100	5%	1/4W
R691	1-247-807-31	CARBON	100	5%	1/4W
R693	1-247-807-31	CARBON	100	5%	1/4W
R694	1-247-807-31	CARBON	100	5%	1/4W
R695	1-249-411-11	CARBON	330	5%	1/4W
R696	1-249-411-11	CARBON	330	5%	1/4W
R697	1-249-411-11	CARBON	330	5%	1/4W
**********					
*	1-651-397-11	COUNT SW BOARD			
		**********			
		< SWITCH >			
SW502	1-692-193-11	SWITCH, PUSH (1 KEY) (INIT)			
SW503	1-572-126-11	SWITCH, PUSH (1 KEY) (COUNT)			
**********					
*	1-651-398-11	DISC SENS (A) BOARD			
		**********			
		< DIODE >			
D501	8-719-029-95	LED TLN117			
**********					
*	1-651-399-11	DISC SENS (B) BOARD			
		**********			
		< CONNECTOR >			
* CN510	1-568-941-11	PIN, CONNECTOR 3P			
		< TRANSISTOR >			
Q501	8-729-018-23	TRANSISTOR TPS626			
		< RESISTOR >			
R502	1-249-425-11	CARBON	4.7K	5%	1/4W
**********					
*	1-667-393-11	DISC SW BOARD			
		**********			
		< CONNECTOR >			
* CNP14	1-568-826-11	SOCKET, CONNECTOR 7P			

Ref. No.	Part No.	Description			Remark
		< SWITCH >			
S1	1-771-225-11	SWITCH, LEVER (DISC1 IN DETECT)			
S3	1-771-225-11	SWITCH, LEVER (DISC2 IN DETECT)			
S5	1-771-225-11	SWITCH, LEVER (DISC3 IN DETECT)			
**********					
*	1-667-394-11	ELV RELAY BOARD			
		**********			
		< CAPACITOR >			
C1	1-126-933-11	ELECT	100uF	20%	10V
C2	1-161-494-00	CERAMIC	0.022uF		25V
C3	1-161-494-00	CERAMIC	0.022uF		25V
		< CONNECTOR >			
* CNP11	1-568-832-11	SOCKET, CONNECTOR 13P			
* CNP16	1-568-848-11	SOCKET, CONNECTOR 5P			
* CNP17	1-568-848-11	SOCKET, CONNECTOR 5P			
		< PHOTO INTERRUPTER >			
D1	8-749-012-33	PHOTO INTERRUPTER GP1S94			
D2	8-749-012-33	PHOTO INTERRUPTER GP1S94			
		< TRANSISTOR >			
Q1	8-729-119-76	TRANSISTOR 2SA1175-HFE			
Q2	8-729-119-76	TRANSISTOR 2SA1175-HFE			
Q3	8-729-119-76	TRANSISTOR 2SA1175-HFE			
		< RESISTOR >			
R1	1-249-412-11	CARBON	390	5%	1/4W
R2	1-249-412-11	CARBON	390	5%	1/4W
R3	1-249-433-11	CARBON	22K	5%	1/4W
R4	1-249-425-11	CARBON	4.7K	5%	1/4W
R5	1-249-437-11	CARBON	47K	5%	1/4W
		< SWITCH >			
S8	1-771-225-11	SWITCH, LEVER (HOME POSITION DETECT)			
S9	1-771-225-11	SWITCH, LEVER (RESET)			
**********					
*	1-667-395-11	HEAD SW BOARD			
		**********			
		< CONNECTOR >			
* CNP18	1-564-705-11	PIN, CONNECTOR (SMALL TYPE) 3P			
		< SWITCH >			
S6	1-762-987-11	SWITCH, PUSH (HEAD UP DETECT)			
S7	1-762-987-11	SWITCH, PUSH (HEAD DOWN DETECT)			
**********					
*	1-667-073-11	HP BOARD			
		*********			
		< CAPACITOR >			
C231	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C281	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C286	1-165-319-11	CERAMIC CHIP	0.1uF		50V

Ref. No.	Part No.	Description			Remark
		< CONNECTOR >			
CN231	1-691-767-11	PLUG (MICRO CONNECTOR) 5P			
		< JACK >			
J230	1-750-032-31	JACK (DIA. 3.5) (PHONES)			
		< LEAD CONNECTOR >			
* WIRE2	1-690-880-31	LEAD (WITH CONNECTOR)			
**********					
*	1-651-395-11	IN SW BOARD			
		**********			
		< CONNECTOR >			
* CN502	1-568-951-11	PIN, CONNECTOR 2P			
		< SWITCH >			
SW501	1-692-193-11	SWITCH, PUSH (1 KEY) (STOCKER)			
**********					
*	1-667-075-11	JOINT BOARD			
		**********			
		< CAPACITOR >			
C791	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C792	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C793	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C794	1-117-370-11	CERAMIC CHIP	10uF		10V
		< CONNECTOR >			
* CN790	1-564-521-11	PLUG, CONNECTOR 6P			
CN791	1-779-853-11	PIN, CONNECTOR 3P			
		< DIODE >			
D791	8-719-988-62	DIODE 1SS355			
D792	8-719-988-62	DIODE 1SS355			
D794	8-719-988-62	DIODE 1SS355			
		< IC >			
IC791	8-749-011-03	IC GP1U26X			
		< TRANSISTOR >			
Q791	8-729-120-28	TRANSISTOR 2SC1623-L5L6			
Q792	8-729-120-28	TRANSISTOR 2SC1623-L5L6			
Q793	8-729-600-22	TRANSISTOR 2SA1235-F			
		< RESISTOR >			
R790	1-216-073-00	METAL CHIP	10K	5%	1/10W
R791	1-216-073-00	METAL CHIP	10K	5%	1/10W
R792	1-216-097-00	METAL CHIP	100K	5%	1/10W
R793	1-216-073-00	METAL CHIP	10K	5%	1/10W
R794	1-216-073-00	METAL CHIP	10K	5%	1/10W
R795	1-216-097-00	METAL CHIP	100K	5%	1/10W
R796	1-216-009-00	METAL CHIP	22	5%	1/10W
R797	1-216-025-00	METAL CHIP	100	5%	1/10W
R798	1-216-073-00	METAL CHIP	10K	5%	1/10W

JOINT **KEY** **MAIN**

Ref. No.	Part No.	Description			Remark
R799	1-216-097-00	METAL CHIP	100K	5%	1/10W
**********					
*	1-667-070-11	KEY BOARD			
		*********			
		< CONNECTOR >			
CN780	1-691-770-11	PLUG (MICRO CONNECTOR) 8P			
		< DIODE >			
D780	8-719-056-11	LED SML72423C-TP4 (MD1)			
D781	8-719-056-11	LED SML72423C-TP4 (MD2)			
D782	8-719-056-11	LED SML72423C-TP4 (MD3)			
		< RESISTOR >			
R780	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R783	1-216-033-00	METAL CHIP	220	5%	1/10W
R784	1-216-037-00	METAL CHIP	330	5%	1/10W
R785	1-216-033-00	METAL CHIP	220	5%	1/10W
R786	1-216-037-00	METAL CHIP	330	5%	1/10W
R787	1-216-033-00	METAL CHIP	220	5%	1/10W
R788	1-216-037-00	METAL CHIP	330	5%	1/10W
		< SWITCH >			
S780	1-762-875-21	SWITCH, KEYBOARD (MD ⏏)			
**********					
*	A-4403-362-A	MAIN BOARD, COMPLETE (AEP, UK, G, AED)			
*	A-4403-363-A	MAIN BOARD, COMPLETE (MY, SP, HK)			
*	A-4403-364-A	MAIN BOARD, COMPLETE (US)			
*	A-4407-369-A	MAIN BOARD, COMPLETE (JE)			
		**********			
		< CAPACITOR >			
C101	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C102	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C103	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C105	1-126-048-81	ELECT	10uF	20%	50V
C106	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C107	1-126-048-81	ELECT	10uF	20%	50V
C108	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C110	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C111	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C112	1-164-344-11	CERAMIC CHIP	0.068uF	10%	25V
C113	1-164-344-11	CERAMIC CHIP	0.068uF	10%	25V
C114	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V
C115	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V
C116	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C117	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C118	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C119	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C120	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C121	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C122	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C123	1-126-059-11	ELECT	10uF	20%	50V
C124	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C125	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C126	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C127	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V

Ref. No.	Part No.	Description			Remark
C128	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C129	1-126-157-11	ELECT	10uF	20%	16V
C143	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C144	1-126-157-11	ELECT	10uF	20%	16V
C145	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C147	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C148	1-124-234-00	ELECT	22uF	20%	16V
C151	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C152	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C153	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C155	1-126-048-81	ELECT	10uF	20%	50V
C156	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C157	1-126-048-81	ELECT	10uF	20%	50V
C158	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C160	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C161	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C162	1-164-344-11	CERAMIC CHIP	0.068uF	10%	25V
C163	1-164-344-11	CERAMIC CHIP	0.068uF	10%	25V
C164	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V
C165	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V
C166	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C167	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C168	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C169	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C170	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C171	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C172	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C173	1-126-059-11	ELECT	10uF	20%	50V
C174	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C175	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C176	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C177	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C178	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C179	1-126-157-11	ELECT	10uF	20%	16V
C190	1-126-157-11	ELECT	10uF	20%	16V
C301	1-126-157-11	ELECT	10uF	20%	16V
C351	1-126-157-11	ELECT	10uF	20%	16V
C362	1-124-589-11	ELECT	47uF	20%	16V (AEP, UK, G, AED)
C366	1-126-157-11	ELECT	10uF	20%	16V (AEP, UK, G, AED)
C367	1-164-505-11	CERAMIC CHIP	2.2uF		16V (AEP, UK, G, AED)
C368	1-163-003-11	CERAMIC CHIP	330PF	10%	50V (AEP, UK, G, AED)
C369	1-164-232-11	CERAMIC CHIP	0.01uF		50V (AEP, UK, G, AED)
C370	1-163-135-00	CERAMIC CHIP	560PF	5%	50V (AEP, UK, G, AED)
C371	1-163-239-11	CERAMIC CHIP	33PF	5%	50V (AEP, UK, G, AED)
C372	1-163-243-11	CERAMIC CHIP	33PF	5%	50V (AEP, UK, G, AED)
C373	1-164-232-11	CERAMIC CHIP	0.01uF		50V (AEP, UK, G, AED)
C400	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C401	1-163-235-11	CERAMIC CHIP	22PF	5%	50V
C403	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C404	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V

Ref. No.	Part No.	Description			Remark
C405	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C406	1-124-257-00	ELECT	2.2uF	20%	16V
C407	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C408	1-126-154-11	ELECT	47uF	20%	6.3V
C409	1-126-163-11	ELECT	4.7uF	20%	50V
C900	1-136-165-00	FILM	0.1uF	5%	50V
C901	1-136-165-00	FILM	0.1uF	5%	50V
C902	1-126-027-11	ELECT	1000uF	20%	25V
C903	1-126-027-11	ELECT	1000uF	20%	25V
C904	1-126-008-51	ELECT	47uF	20%	16V
C905	1-126-009-81	ELECT	100uF	20%	16V
C906	1-126-048-81	ELECT	10uF	20%	50V
C907	1-126-052-11	ELECT	100uF	20%	50V
C908	1-126-048-81	ELECT	10uF	20%	50V
C909	1-126-052-11	ELECT	100uF	20%	50V
C920	1-136-165-00	FILM	0.1uF	5%	50V
C921	1-119-873-21	ELECT	10000uF	20%	16V
C922	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C923	1-124-584-00	ELECT	100uF	20%	10V
C924	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C925	1-126-051-11	ELECT	47uF	20%	50V
C928	1-126-157-11	ELECT	10uF	20%	16V
C930	1-124-584-00	ELECT	100uF	20%	10V
C931	1-126-008-51	ELECT	47uF	20%	16V
C950	1-126-941-11	ELECT	470uF	20%	25V
C951	1-126-949-11	ELECT	220uF	20%	35V
C952	1-126-968-11	ELECT	100uF	20%	50V
C953	1-126-964-11	ELECT	10uF	20%	50V
C954	1-126-964-11	ELECT	10uF	20%	50V
C955	1-126-949-11	ELECT	220uF	20%	35V
C956	1-107-818-11	DOUBLE LAYER	1F		5.5V
C957	1-104-905-11	DOUBLE LAYER	0.22F		5.5V
		< CONNECTOR >			
* CN101	1-568-854-11	SOCKET, CONNECTOR 11P			
* CN112	1-568-949-11	PIN, CONNECTOR 11P			
* CN200	1-564-520-11	PLUG, CONNECTOR 5P			
* CN400	1-568-862-11	SOCKET, CONNECTOR 19P			
* CN401	1-568-862-11	SOCKET, CONNECTOR 19P			
* CN402	1-565-561-11	PIN, CONNECTOR 3P (AU BUS)			
* CN900	1-564-522-11	PLUG, CONNECTOR 7P			
* CN920	1-564-520-11	PLUG, CONNECTOR 5P			
		< DIODE >			
D110	8-719-976-99	DIODE DTZ5.1B			
D111	8-719-988-62	DIODE 1SS355			
D360	8-719-988-62	DIODE 1SS355 (AEP, UK, G, AED)			
D401	8-719-988-62	DIODE 1SS355			
D402	8-719-988-62	DIODE 1SS355			
D403	8-719-988-62	DIODE 1SS355			
D404	8-719-988-62	DIODE 1SS355			
D900	8-719-200-82	DIODE 11ES2			
D901	8-719-200-82	DIODE 11ES2			
D902	8-719-200-82	DIODE 11ES2			
D903	8-719-200-82	DIODE 11ES2			
D904	8-719-977-31	DIODE DTZ11A			
D905	8-719-977-17	DIODE DTZ7.5C			
D906	8-719-977-17	DIODE DTZ7.5C			

Ref. No.	Part No.	Description			Remark
D920	8-719-025-03	DIODE RBA-402-SL			
D924	8-719-988-62	DIODE 1SS355			
D925	8-719-988-62	DIODE 1SS355			
D950	8-719-200-82	DIODE 11ES2			
D951	8-719-200-82	DIODE 11ES2			
D952	8-719-200-82	DIODE 11ES2			
D953	8-719-978-94	DIODE DTZ-TT11-30C			
D954	8-719-976-99	DIODE DTZ5.1B			
D955	8-719-200-82	DIODE 11ES2			
		< IC >			
IC100	8-759-009-06	IC MC14052BF			
IC111	8-759-460-02	IC M62427FP-A			
IC361	8-759-450-88	IC BU1922-E2 (AEP, UK, G, AED)			
IC400	8-759-493-73	IC uPD780016YGF-021-3BA			
IC401	8-759-165-80	IC PST600C-T			
IC920	8-759-701-75	IC NJM7805FA			
IC921	8-759-701-75	IC NJM7805FA			
		< JACK >			
J100	1-770-890-11	JACK, PIN 6P (TAPE OUT, TAPE IN, GAME/VIDEO IN)			
		< COIL >			
L360	1-412-039-51	INDUCTOR CHIP 100uH (AEP, UK, G, AED)			
		< TRANSISTOR >			
Q110	8-729-107-43	TRANSISTOR 2SC3624-L18			
Q111	8-729-120-28	TRANSISTOR 2SC1623-L5L6			
Q112	8-729-120-28	TRANSISTOR 2SC1623-L5L6			
Q113	8-729-107-43	TRANSISTOR 2SC3624-L18			
Q114	8-729-424-59	TRANSISTOR UN2212			
Q160	8-729-107-43	TRANSISTOR 2SC3624-L18			
Q161	8-729-120-28	TRANSISTOR 2SC1623-L5L6			
Q162	8-729-120-28	TRANSISTOR 2SC1623-L5L6			
Q163	8-729-107-43	TRANSISTOR 2SC3624-L18			
Q400	8-729-120-28	TRANSISTOR 2SC1623-L5L6			
Q401	8-729-120-28	TRANSISTOR 2SC1623-L5L6			
Q402	8-729-424-59	TRANSISTOR UN2212			
Q403	8-729-424-12	TRANSISTOR UN2112			
Q900	8-729-018-60	TRANSISTOR 2SD2012-LC			
Q902	8-729-018-60	TRANSISTOR 2SD2012-LC			
Q903	8-729-424-59	TRANSISTOR UN2212			
Q904	8-729-018-59	TRANSISTOR 2SB1375-LC			
Q906	8-729-424-59	TRANSISTOR UN2212			
Q907	8-729-600-22	TRANSISTOR 2SA1235-F			
Q908	8-729-202-67	FET 2SK246-GR3			
Q909	8-729-424-14	TRANSISTOR UN2112-TX			
Q920	8-729-120-28	TRANSISTOR 2SC1623-L5L6			
Q921	8-729-120-28	TRANSISTOR 2SC1623-L5L6			
Q922	8-729-600-22	TRANSISTOR 2SA1235-F			
Q950	8-729-018-59	TRANSISTOR 2SB1375-LC			
		< RESISTOR/CHIP CONDUCTOR >			
R101	1-216-097-00	METAL CHIP	100K	5%	1/10W
R102	1-216-025-00	METAL CHIP	100	5%	1/10W
R103	1-216-049-11	METAL CHIP	1K	5%	1/10W

MAIN

Ref. No.	Part No.	Description			Remark
R104	1-216-097-00	METAL CHIP	100K	5%	1/10W
R105	1-216-073-00	METAL CHIP	10K	5%	1/10W
R106	1-216-097-00	METAL CHIP	100K	5%	1/10W
R107	1-216-097-00	METAL CHIP	100K	5%	1/10W
R108	1-216-049-11	METAL CHIP	1K	5%	1/10W
R109	1-216-097-00	METAL CHIP	100K	5%	1/10W
R110	1-216-049-11	METAL CHIP	1K	5%	1/10W
R111	1-216-073-00	METAL CHIP	10K	5%	1/10W
R112	1-216-073-00	METAL CHIP	10K	5%	1/10W
R113	1-216-025-00	METAL CHIP	100	5%	1/10W
R114	1-216-089-00	METAL CHIP	47K	5%	1/10W
R115	1-216-089-00	METAL CHIP	47K	5%	1/10W
R116	1-216-049-11	METAL CHIP	1K	5%	1/10W
R117	1-216-049-11	METAL CHIP	1K	5%	1/10W
R118	1-216-097-00	METAL CHIP	100K	5%	1/10W
R120	1-216-121-00	METAL CHIP	1M	5%	1/10W
R121	1-216-111-00	METAL CHIP	390K	5%	1/10W
R122	1-216-081-00	METAL CHIP	22K	5%	1/10W
R123	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R124	1-216-097-00	METAL CHIP	100K	5%	1/10W
R125	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R126	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R127	1-216-049-11	METAL CHIP	1K	5%	1/10W
R128	1-216-073-00	METAL CHIP	10K	5%	1/10W
R129	1-216-049-11	METAL CHIP	1K	5%	1/10W
R140	1-216-073-00	METAL CHIP	10K	5%	1/10W
R141	1-216-073-00	METAL CHIP	10K	5%	1/10W
R142	1-216-025-00	METAL CHIP	100	5%	1/10W
R143	1-216-025-00	METAL CHIP	100	5%	1/10W
R144	1-216-025-00	METAL CHIP	100	5%	1/10W
R145	1-216-029-00	METAL CHIP	150	5%	1/10W
R146	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R147	1-216-089-00	METAL CHIP	47K	5%	1/10W
R149	1-216-089-00	METAL CHIP	47K	5%	1/10W
R151	1-216-097-00	METAL CHIP	100K	5%	1/10W
R152	1-216-025-00	METAL CHIP	100	5%	1/10W
R153	1-216-049-11	METAL CHIP	1K	5%	1/10W
R154	1-216-097-00	METAL CHIP	100K	5%	1/10W
R155	1-216-073-00	METAL CHIP	10K	5%	1/10W
R156	1-216-097-00	METAL CHIP	100K	5%	1/10W
R157	1-216-097-00	METAL CHIP	100K	5%	1/10W
R158	1-216-049-11	METAL CHIP	1K	5%	1/10W
R159	1-216-097-00	METAL CHIP	100K	5%	1/10W
R160	1-216-049-11	METAL CHIP	1K	5%	1/10W
R161	1-216-073-00	METAL CHIP	10K	5%	1/10W
R162	1-216-073-00	METAL CHIP	10K	5%	1/10W
R163	1-216-025-00	METAL CHIP	100	5%	1/10W
R164	1-216-089-00	METAL CHIP	47K	5%	1/10W
R165	1-216-089-00	METAL CHIP	47K	5%	1/10W
R166	1-216-049-11	METAL CHIP	1K	5%	1/10W
R167	1-216-049-11	METAL CHIP	1K	5%	1/10W
R168	1-216-097-00	METAL CHIP	100K	5%	1/10W
R170	1-216-121-00	METAL CHIP	1M	5%	1/10W
R171	1-216-111-00	METAL CHIP	390K	5%	1/10W
R172	1-216-081-00	METAL CHIP	22K	5%	1/10W
R173	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R174	1-216-097-00	METAL CHIP	100K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R175	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R176	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R177	1-216-049-11	METAL CHIP	1K	5%	1/10W
R178	1-216-073-00	METAL CHIP	10K	5%	1/10W
R179	1-216-049-11	METAL CHIP	1K	5%	1/10W
R190	1-216-073-00	METAL CHIP	10K	5%	1/10W
R191	1-216-045-00	METAL CHIP	680	5%	1/10W
R302	1-216-049-11	METAL CHIP	1K	5%	1/10W
R303	1-216-097-00	METAL CHIP	100K	5%	1/10W
R304	1-216-073-00	METAL CHIP	10K	5%	1/10W
R305	1-216-073-00	METAL CHIP	10K	5%	1/10W
R330	1-216-073-00	METAL CHIP	10K	5%	1/10W
R331	1-216-073-00	METAL CHIP	10K	5%	1/10W
R332	1-216-073-00	METAL CHIP	10K	5%	1/10W
R333	1-216-073-00	METAL CHIP	10K	5%	1/10W
R352	1-216-049-11	METAL CHIP	1K	5%	1/10W
R353	1-216-097-00	METAL CHIP	100K	5%	1/10W
⚠R360	1-249-405-11	CARBON	100	5%	1/4W F (AEP, UK, G, AED)
⚠R365	1-249-397-11	CARBON	22	5%	1/4W F (AEP, UK, G, AED)
R366	1-216-025-00	METAL CHIP	100	5%	1/10W
R367	1-216-025-00	METAL CHIP	100	5%	1/10W
R368	1-216-049-00	METAL CHIP	1K	5%	1/10W (AEP, UK, G, AED)
R400	1-216-073-00	METAL CHIP	10K	5%	1/10W
R401	1-216-085-00	METAL CHIP	33K	5%	1/10W
R402	1-216-073-00	METAL CHIP	10K	5%	1/10W
R403	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R404	1-216-073-00	METAL CHIP	10K	5%	1/10W
R405	1-216-049-11	METAL CHIP	1K	5%	1/10W
R406	1-216-025-00	METAL CHIP	100	5%	1/10W
R407	1-216-073-00	METAL CHIP	10K	5%	1/10W
R408	1-216-025-00	METAL CHIP	100	5%	1/10W
R409	1-216-073-00	METAL CHIP	10K	5%	1/10W
R410	1-216-073-00	METAL CHIP	10K	5%	1/10W
R411	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R412	1-216-073-00	METAL CHIP	10K	5%	1/10W
R413	1-216-001-00	METAL CHIP	10	5%	1/10W
R419	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R420	1-216-073-00	METAL CHIP	10K	5%	1/10W
R421	1-216-025-00	METAL CHIP	100	5%	1/10W
R422	1-216-025-00	METAL CHIP	100	5%	1/10W
R423	1-216-073-00	METAL CHIP	10K	5%	1/10W
R424	1-216-025-00	METAL CHIP	100	5%	1/10W
R425	1-216-073-00	METAL CHIP	10K	5%	1/10W
R426	1-216-025-00	METAL CHIP	100	5%	1/10W
R427	1-216-073-00	METAL CHIP	10K	5%	1/10W
R428	1-216-025-00	METAL CHIP	100	5%	1/10W
R429	1-216-073-00	METAL CHIP	10K	5%	1/10W
R430	1-216-025-00	METAL CHIP	100	5%	1/10W
R431	1-216-025-00	METAL CHIP	100	5%	1/10W
R432	1-216-025-00	METAL CHIP	100	5%	1/10W
R433	1-216-025-00	METAL CHIP	100	5%	1/10W
R434	1-216-025-00	METAL CHIP	100	5%	1/10W
R435	1-216-025-00	METAL CHIP	100	5%	1/10W
R436	1-216-025-00	METAL CHIP	100	5%	1/10W
R437	1-216-025-00	METAL CHIP	100	5%	1/10W

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description			Remark
R438	1-216-073-00	METAL CHIP	10K	5%	1/10W
R439	1-216-073-00	METAL CHIP	10K	5%	1/10W
R440	1-216-073-00	METAL CHIP	10K	5%	1/10W
R441	1-216-073-00	METAL CHIP	10K	5%	1/10W
R445	1-216-049-11	METAL CHIP	1K	5%	1/10W
R446	1-216-115-00	METAL CHIP	560K	5%	1/10W
R447	1-216-025-91	METAL CHIP	100	5%	1/10W
R448	1-216-295-00	CONDUCTOR, CHIP (2012) (US, MY, SP, HK)			
R449	1-216-295-00	CONDUCTOR, CHIP (2012) (EXCEPT US)			
R450	1-216-295-00	CONDUCTOR, CHIP (2012) (EXCEPT US, JE)			
R451	1-216-295-00	CONDUCTOR, CHIP (2012) (MY, SP, HK, JE)			
R460	1-216-073-00	METAL CHIP	10K	5%	1/10W
⚠R900	1-217-637-00	FUSIBLE	1	5%	1/4W F
⚠R901	1-217-637-00	FUSIBLE	1	5%	1/4W F
⚠R902	1-219-786-11	FUSIBLE	22	5%	1/4W F
⚠R905	1-219-786-11	FUSIBLE	22	5%	1/4W F
⚠R906	1-249-419-11	CARBON	1.5K	5%	1/4W F
R907	1-216-001-00	METAL CHIP	10	5%	1/10W
⚠R908	1-219-786-11	FUSIBLE	22	5%	1/4W F
⚠R909	1-249-419-11	CARBON	1.5K	5%	1/4W F
R910	1-216-001-00	METAL CHIP	10	5%	1/10W
R912	1-216-097-00	METAL CHIP	100K	5%	1/10W
R913	1-216-089-00	METAL CHIP	47K	5%	1/10W
R914	1-216-081-00	METAL CHIP	22K	5%	1/10W
⚠R920	1-219-119-11	FUSIBLE	0.1	5%	1/4W F
R921	1-216-049-11	METAL CHIP	1K	5%	1/10W
R922	1-216-049-11	METAL CHIP	1K	5%	1/10W
R923	1-216-049-11	METAL CHIP	1K	5%	1/10W
R924	1-216-063-00	METAL CHIP	3.9K	5%	1/10W
R925	1-216-295-00	CONDUCTOR, CHIP (2012)			
R926	1-216-089-00	METAL CHIP	47K	5%	1/10W
R927	1-216-073-00	METAL CHIP	10K	5%	1/10W
R928	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
⚠R950	1-219-119-11	FUSIBLE	0.1	5%	1/4W F
⚠R951	1-249-429-11	CARBON	10K	5%	1/4W F
R952	1-216-073-00	METAL CHIP	10K	5%	1/10W
R953	1-216-041-00	METAL CHIP	470	5%	1/10W
R954	1-216-041-00	METAL CHIP	470	5%	1/10W
R1000	1-216-295-00	CONDUCTOR, CHIP (2012)			
		< VIBRATOR >			
X360	1-579-900-21	VIBRATOR, CRYSTAL (4.332MHz) (AEP, UK, G, AED)			
X400	1-760-489-11	VIBRATOR, CERAMIC (5MHz)			
X401	1-567-098-41	VIBRATOR, CRYSTAL (32.768MHz)			
**********					
*	1-667-396-11	MECHA RELAY BOARD			
		**********			
		< CONNECTOR >			
* CNP12	1-695-374-31	SOCKET, CONNECTOR 13P			
* CNP13	1-770-524-31	SOCKET, CONNECTOR 17P			
* CNP15	1-695-368-31	SOCKET, CONNECTOR 7P			
**********					
*	1-651-393-11	MID SENS BOARD			
		**********			
	4-964-461-02	HOLDER (SENSOR)			

Ref. No.	Part No.	Description			Remark
		< PHOTO INTERRUPTER >			
IC501	8-729-020-74	PHOTO INTERRUPTER GP1S24			
**********					
*	1-667-633-11	MOTOR RELAY BOARD			
		**********			
		< CAPACITOR >			
C4	1-101-005-00	CERAMIC	22000PF		50V
		< CONNECTOR >			
* CNP19	1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P			
**********					
*	1-651-394-11	OPEN/CLOSE SW BOARD			
		**********			
		< CONNECTOR >			
CN512	1-506-481-11	PIN, CONNECTOR 2P			
* CN514	1-568-941-11	PIN, CONNECTOR 3P			
		< RESISTOR >			
R503	1-249-408-11	CARBON	180	5%	1/4W F
R504	1-249-435-11	CARBON	33K	5%	1/4W
		< SWITCH >			
SW505	1-571-300-21	SWITCH, ROTARY (TRAY OPEN/CLOSE DETECT)			
**********					
*	1-651-392-11	OUT SW BOARD			
		**********			
		< CONNECTOR >			
CN503	1-506-481-11	PIN, CONNECTOR 2P			
		< SWITCH >			
SW504	1-692-193-11	SWITCH, PUSH (1 KEY) (MID)			
**********					
*	A-4403-366-A	PANEL BOARD, COMPLETE			
		**********			
*	4-932-810-01	CUSHION (FL)			
*	4-954-701-01	HOLDER (FL TUBE)			
		< CAPACITOR >			
C700	1-126-964-11	ELECT	10uF	20%	50V
C701	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C702	1-126-965-11	ELECT	22uF	20%	50V
C703	1-126-965-11	ELECT	22uF	20%	50V
C704	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C705	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C706	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C707	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C708	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C709	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C710	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C711	1-164-506-11	CERAMIC CHIP	4.7uF		16V

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

PANEL | PANEL-SW | RDS

Ref. No.	Part No.	Description			Remark
C712	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C713	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C714	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C715	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C716	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C717	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C718	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C719	1-165-319-11	CERAMIC CHIP	0.1uF		50V
		< CONNECTOR >			
* CN701	1-568-862-11	SOCKET, CONNECTOR 19P			
		< DIODE >			
D701	8-719-058-04	LED SEL5223S-TP15 (DBFB)			
D702	8-719-057-97	LED SEL5923A-TP15 (GROOVE)			
D703	8-719-056-13	LED SML79423C-TP15 (CD1 ⏏)			
D704	8-719-056-13	LED SML79423C-TP15 (CD2 ⏏)			
D705	8-719-056-13	LED SML79423C-TP15 (CD3 ⏏)			
		< FLUORESCENT INDICATOR TUBE >			
FL700	1-517-691-11	INDICATOR TUBE, FLUORESCENT			
		< IC >			
IC700	8-759-487-07	IC M66004M8FP-200D			
IC701	8-759-495-68	IC M66310FP-E2			
IC702	8-759-459-84	IC NJL56H400			
IC703	8-759-009-06	IC MC14052BF			
		< TRANSISTOR >			
Q700	8-729-120-28	TRANSISTOR 2SC1623-L5L6			
Q701	8-729-120-28	TRANSISTOR 2SC1623-L5L6			
		< RESISTOR >			
R701	1-216-037-00	METAL CHIP	330	5%	1/10W
R702	1-216-029-00	METAL CHIP	150	5%	1/10W
R703	1-216-029-00	METAL CHIP	150	5%	1/10W
R704	1-216-033-00	METAL CHIP	220	5%	1/10W
R705	1-216-029-00	METAL CHIP	150	5%	1/10W
R706	1-216-033-00	METAL CHIP	220	5%	1/10W
R707	1-216-029-00	METAL CHIP	150	5%	1/10W
R708	1-216-033-00	METAL CHIP	220	5%	1/10W
R709	1-216-049-11	METAL CHIP	1K	5%	1/10W
R710	1-216-073-00	METAL CHIP	10K	5%	1/10W
R711	1-216-073-00	METAL CHIP	10K	5%	1/10W
R712	1-216-049-11	METAL CHIP	1K	5%	1/10W
R713	1-216-073-00	METAL CHIP	10K	5%	1/10W
R714	1-216-073-00	METAL CHIP	10K	5%	1/10W
R715	1-216-049-11	METAL CHIP	1K	5%	1/10W
R716	1-216-049-11	METAL CHIP	1K	5%	1/10W
R717	1-216-097-00	METAL CHIP	100K	5%	1/10W
R718	1-216-097-00	METAL CHIP	100K	5%	1/10W
R719	1-216-049-11	METAL CHIP	1K	5%	1/10W
R720	1-216-049-11	METAL CHIP	1K	5%	1/10W
R721	1-216-085-00	METAL CHIP	33K	5%	1/10W
R722	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R723	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R724	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R725	1-216-057-00	METAL CHIP	2.2K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R726	1-216-009-00	METAL CHIP	22	5%	1/10W
R727	1-216-049-11	METAL CHIP	1K	5%	1/10W
R728	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R729	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R730	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R731	1-216-049-11	METAL CHIP	1K	5%	1/10W
R732	1-216-097-00	METAL CHIP	100K	5%	1/10W
		< SWITCH >			
S700	1-762-875-21	SWITCH, KEYBOARD (POWER)			
S701	1-762-875-21	SWITCH, KEYBOARD (DIMMER)			
S703	1-762-875-21	SWITCH, KEYBOARD (GROOVE)			
S704	1-762-875-21	SWITCH, KEYBOARD (DBFB)			
S705	1-762-875-21	SWITCH, KEYBOARD (CD1 ⏏)			
S706	1-762-875-21	SWITCH, KEYBOARD (CD2 ⏏)			
S707	1-762-875-21	SWITCH, KEYBOARD (CD3 ⏏)			
**********					
*	1-667-076-11	PANEL-SW BOARD			
		**********			
		< CONNECTOR >			
CN793	1-506-481-11	PIN, CONNECTOR 2P			
		< SWITCH >			
S790	1-572-126-11	SWITCH, PUSH (1 KEY) (CD DOOR CLOSE DETECT)			
**********					
		RDS BOARD			
		**********			
		(Included in MAIN BOARD, COMPLETE)			
		< CAPACITOR >			
C302	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C363	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V (AEP, UK, G, AED)
C364	1-126-157-11	ELECT	10uF	20%	16V (AEP, UK, G, AED)
		< CONNECTOR >			
CN300	1-774-289-11	PIN, CONNECTOR (PC BOARD) 15P			
		< IC >			
IC360	8-759-636-55	IC M5218AFP (AEP, UK, G, AED)			
		< RESISTOR/CHIP CONDUCTOR >			
R361	1-216-079-00	METAL CHIP	18K	5%	1/10W (AEP, UK, G, AED)
R362	1-216-067-00	METAL CHIP	5.6K	5%	1/10W (AEP, UK, G, AED)
R363	1-216-097-00	METAL CHIP	100K	5%	1/10W (AEP, UK, G, AED)
R364	1-216-097-00	METAL CHIP	100K	5%	1/10W (AEP, UK, G, AED)
R371	1-216-295-00	CONDUCTOR, CHIP (2012) (AEP, UK, G, AED)			
**********					

Ref. No.	Part No.	Description			Remark
*	1-667-071-11	REG 5V BOARD			
		**********			
		< CAPACITOR >			
C934	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C935	1-165-319-11	CERAMIC CHIP	0.1uF		50V
		< IC >			
IC922	8-759-701-75	IC NJM7805FA			
**********					
*	1-667-072-11	REG 7V BOARD			
		**********			
		< CAPACITOR >			
C936	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C937	1-165-319-11	CERAMIC CHIP	0.1uF		50V
		< IC >			
IC923	8-759-605-00	IC M5F78M07L			
**********					
*	A-4403-359-A	RM BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C1	1-164-337-11	CERAMIC CHIP	2.2uF		16V
C2	1-164-337-11	CERAMIC CHIP	2.2uF		16V
C3	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C5	1-164-337-11	CERAMIC CHIP	2.2uF		16V
C6	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C7	1-163-031-11	CERAMIC CHIP	0.01uF		50V
C8	1-104-905-11	DOUBLE LAYER	0.22F		5.5V
C14	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C15	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C16	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C17	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
		< DIODE >			
D1	8-719-059-67	DIODE SID1003BQ-TP19			
D2	8-719-988-62	DIODE 1SS355			
D3	8-719-023-22	DIODE MA704A			
D4	8-719-988-62	DIODE 1SS355			
D5	8-719-988-62	DIODE 1SS355			
		< IC >			
IC1	8-759-480-93	IC MB89191PF-195			
		< CHIP CONDUCTOR >			
JW10	1-216-296-00	CONDUCTOR, CHIP (3216)			
JW11	1-216-296-00	CONDUCTOR, CHIP (3216)			
JW13	1-216-296-00	CONDUCTOR, CHIP (3216)			
JW14	1-216-296-00	CONDUCTOR, CHIP (3216)			
JW17	1-216-296-00	CONDUCTOR, CHIP (3216)			
JW18	1-216-296-00	CONDUCTOR, CHIP (3216)			
JW19	1-216-296-00	CONDUCTOR, CHIP (3216)			
JW20	1-216-296-00	CONDUCTOR, CHIP (3216)			

Ref. No.	Part No.	Description	Remark
JW21	1-216-296-00	CONDUCTOR, CHIP (3216)	
JW22	1-216-296-00	CONDUCTOR, CHIP (3216)	
JW23	1-216-296-00	CONDUCTOR, CHIP (3216)	
JW24	1-216-296-00	CONDUCTOR, CHIP (3216)	
JW25	1-216-296-00	CONDUCTOR, CHIP (3216)	
JW27	1-216-296-00	CONDUCTOR, CHIP (3216)	
JW28	1-216-296-00	CONDUCTOR, CHIP (3216)	
JW29	1-216-296-00	CONDUCTOR, CHIP (3216)	
JW30	1-216-296-00	CONDUCTOR, CHIP (3216)	
JW31	1-216-296-00	CONDUCTOR, CHIP (3216)	
JW31	1-216-296-00	CONDUCTOR, CHIP (3216)	
JW32	1-216-296-00	CONDUCTOR, CHIP (3216)	
JW33	1-216-296-00	CONDUCTOR, CHIP (3216)	
JW34	1-216-296-00	CONDUCTOR, CHIP (3216)	
JW35	1-216-296-00	CONDUCTOR, CHIP (3216)	
JW36	1-216-296-00	CONDUCTOR, CHIP (3216)	
JW37	1-216-296-00	CONDUCTOR, CHIP (3216)	
JW38	1-216-296-00	CONDUCTOR, CHIP (3216)	
JW40	1-216-296-00	CONDUCTOR, CHIP (3216)	
JW41	1-216-296-00	CONDUCTOR, CHIP (3216)	
JW42	1-216-296-00	CONDUCTOR, CHIP (3216)	
JW43	1-216-296-00	CONDUCTOR, CHIP (3216)	
JW44	1-216-296-00	CONDUCTOR, CHIP (3216)	
JW45	1-216-296-00	CONDUCTOR, CHIP (3216)	
JW46	1-216-296-00	CONDUCTOR, CHIP (3216)	
JW47	1-216-296-00	CONDUCTOR, CHIP (3216)	
JW48	1-216-296-00	CONDUCTOR, CHIP (3216)	
JW49	1-216-296-00	CONDUCTOR, CHIP (3216)	
JW50	1-216-296-00	CONDUCTOR, CHIP (3216)	
JW51	1-216-296-00	CONDUCTOR, CHIP (3216)	
JW52	1-216-296-00	CONDUCTOR, CHIP (3216)	
JW53	1-216-296-00	CONDUCTOR, CHIP (3216)	
JW54	1-216-296-00	CONDUCTOR, CHIP (3216)	
JW55	1-216-296-00	CONDUCTOR, CHIP (3216)	
JW56	1-216-296-00	CONDUCTOR, CHIP (3216)	
JW57	1-216-296-00	CONDUCTOR, CHIP (3216)	
JW58	1-216-296-00	CONDUCTOR, CHIP (3216)	
JW59	1-216-296-00	CONDUCTOR, CHIP (3216)	
JW60	1-216-296-00	CONDUCTOR, CHIP (3216)	
JW61	1-216-296-00	CONDUCTOR, CHIP (3216)	
JW62	1-216-296-00	CONDUCTOR, CHIP (3216)	
JW63	1-216-296-00	CONDUCTOR, CHIP (3216)	
JW65	1-216-296-00	CONDUCTOR, CHIP (3216)	
JW66	1-216-296-00	CONDUCTOR, CHIP (3216)	
JW67	1-216-296-00	CONDUCTOR, CHIP (3216)	
JW68	1-216-296-00	CONDUCTOR, CHIP (3216)	
JW69	1-216-296-00	CONDUCTOR, CHIP (3216)	
JW70	1-216-296-00	CONDUCTOR, CHIP (3216)	
JW71	1-216-296-00	CONDUCTOR, CHIP (3216)	
JW72	1-216-296-00	CONDUCTOR, CHIP (3216)	
JW73	1-216-296-00	CONDUCTOR, CHIP (3216)	
JW74	1-216-296-00	CONDUCTOR, CHIP (3216)	
JW75	1-216-296-00	CONDUCTOR, CHIP (3216)	
JW76	1-216-296-00	CONDUCTOR, CHIP (3216)	
JW77	1-216-296-00	CONDUCTOR, CHIP (3216)	
JW78	1-216-296-00	CONDUCTOR, CHIP (3216)	

RM **SP** **SUB**

Ref. No.	Part No.	Description			Remark
		< TRANSISTOR >			
Q1	8-729-041-50	TRANSISTOR 2SD2444KT146			
Q2	8-729-424-08	TRANSISTOR UN2111			
Q3	8-729-120-28	TRANSISTOR 2SC1623-L5L6			
Q4	8-729-120-28	TRANSISTOR 2SC1623-L5L6			
Q5	8-729-600-22	TRANSISTOR 2SA1235-F			
Q6	8-729-120-28	TRANSISTOR 2SC1623-L5L6			
		< RESISTOR >			
R1	1-216-025-00	METAL CHIP	100	5%	1/10W
R2	1-216-134-00	METAL CHIP	2.2	5%	1/8W
R3	1-216-049-11	METAL CHIP	1K	5%	1/10W
R4	1-216-049-11	METAL CHIP	1K	5%	1/10W
R5	1-216-097-00	METAL CHIP	100K	5%	1/10W
R6	1-216-073-00	METAL CHIP	10K	5%	1/10W
R7	1-216-073-00	METAL CHIP	10K	5%	1/10W
R8	1-216-073-00	METAL CHIP	10K	5%	1/10W
R9	1-216-134-00	METAL CHIP	2.2	5%	1/8W
R10	1-216-049-11	METAL CHIP	1K	5%	1/10W
R11	1-216-049-11	METAL CHIP	1K	5%	1/10W
R12	1-216-049-11	METAL CHIP	1K	5%	1/10W
R13	1-216-049-11	METAL CHIP	1K	5%	1/10W
R14	1-216-081-00	METAL CHIP	22K	5%	1/10W
R15	1-216-073-00	METAL CHIP	10K	5%	1/10W
R16	1-216-081-00	METAL CHIP	22K	5%	1/10W
R17	1-216-073-00	METAL CHIP	10K	5%	1/10W
R20	1-216-049-11	METAL CHIP	1K	5%	1/10W
R21	1-216-049-11	METAL CHIP	1K	5%	1/10W
R22	1-216-049-11	METAL CHIP	1K	5%	1/10W
R23	1-216-049-11	METAL CHIP	1K	5%	1/10W
R24	1-216-049-11	METAL CHIP	1K	5%	1/10W
R25	1-216-049-11	METAL CHIP	1K	5%	1/10W
R26	1-216-049-11	METAL CHIP	1K	5%	1/10W
R30	1-216-097-00	METAL CHIP	100K	5%	1/10W
R31	1-216-097-00	METAL CHIP	100K	5%	1/10W
R32	1-216-097-00	METAL CHIP	100K	5%	1/10W
R33	1-216-097-00	METAL CHIP	100K	5%	1/10W
R34	1-216-097-00	METAL CHIP	100K	5%	1/10W
R35	1-216-097-00	METAL CHIP	100K	5%	1/10W
R36	1-216-097-00	METAL CHIP	100K	5%	1/10W
R37	1-216-097-00	METAL CHIP	100K	5%	1/10W
R38	1-216-121-00	METAL CHIP	1M	5%	1/10W
R39	1-216-113-00	METAL CHIP	470K	5%	1/10W
R40	1-216-121-00	METAL CHIP	1M	5%	1/10W
R41	1-216-113-00	METAL CHIP	470K	5%	1/10W
R42	1-216-073-00	METAL CHIP	10K	5%	1/10W
R43	1-216-073-00	METAL CHIP	10K	5%	1/10W
R44	1-216-073-00	METAL CHIP	10K	5%	1/10W
R45	1-216-073-00	METAL CHIP	10K	5%	1/10W
R46	1-216-073-00	METAL CHIP	10K	5%	1/10W
		< ROTARY ENCODER >			
RV1	1-475-347-11	ENCODER, ROTARY (MULTI JOG)			
RV2	1-475-347-11	ENCODER, ROTARY (VOLUME)			
		< SWITCH >			
S1	1-762-875-21	SWITCH, KEYBOARD (POWER)			
S2	1-762-875-21	SWITCH, KEYBOARD (PRESET EQ)			
S3	1-762-875-21	SWITCH, KEYBOARD (TIMER SET)			
S4	1-762-875-21	SWITCH, KEYBOARD (TIMER SELECT)			
S5	1-762-875-21	SWITCH, KEYBOARD (MANUAL, CONTINU)			
S6	1-762-875-21	SWITCH, KEYBOARD (AUTO, SHUFFLE)			
S7	1-762-875-21	SWITCH, KEYBOARD (PRESET, PROGRAM)			
S8	1-762-875-21	SWITCH, KEYBOARD (STEREO/MONO, REPEAT)			
S9	1-762-875-21	SWITCH, KEYBOARD (EDIT/NO)			
S10	1-762-875-21	SWITCH, KEYBOARD (ENTER/YES)			
S11	1-762-875-21	SWITCH, KEYBOARD (TAPE)			
S12	1-762-875-21	SWITCH, KEYBOARD (MD)			
S13	1-762-875-21	SWITCH, KEYBOARD (CD)			
S14	1-762-875-21	SWITCH, KEYBOARD (BAND, TUNER)			
S15	1-762-875-21	SWITCH, KEYBOARD (FUNCTION)			
S16	1-762-875-21	SWITCH, KEYBOARD (DISP)			
S17	1-762-875-21	SWITCH, KEYBOARD (◀◀)			
S18	1-762-875-21	SWITCH, KEYBOARD (▶▶)			
S19	1-762-875-21	SWITCH, KEYBOARD (MD/CD 1)			
S20	1-762-875-21	SWITCH, KEYBOARD (MD/CD 2)			
S21	1-762-875-21	SWITCH, KEYBOARD (MD/CD 3)			
S22	1-762-875-21	SWITCH, KEYBOARD (▶II)			
S23	1-762-875-21	SWITCH, KEYBOARD (■)			
S24	1-762-875-21	SWITCH, KEYBOARD (CD LOOP)			
S25	1-762-875-21	SWITCH, KEYBOARD (DISK SKIP)			
S26	1-762-875-21	SWITCH, KEYBOARD (REC IT)			
S27	1-762-875-21	SWITCH, KEYBOARD (REC/CD-MD SYNC)			
		< VIBRATOR >			
X1	1-767-723-11	VIBRATOR, CERAMIC (3MHz)			
**********					
*	1-667-081-11	SP BOARD *********			
		< CAPACITOR >			
C109	1-136-153-00	FILM	0.01uF	5%	50V
C110	1-136-153-00	FILM	0.01uF	5%	50V
C159	1-136-153-00	FILM	0.01uF	5%	50V
C160	1-136-153-00	FILM	0.01uF	5%	50V
		< CONNECTOR >			
* CN109	1-564-519-11	PLUG, CONNECTOR 4P			
		< RESISTOR >			
R110	1-260-076-11	CARBON	10	5%	1/2W
R160	1-260-076-11	CARBON	10	5%	1/2W
		< TERMINAL >			
TB109	1-537-822-31	TERMINAL BOARD (SPEAKER)			
**********					
*	A-4403-375-A	SUB BOARD, COMPLETE **********			
		< CAPACITOR >			
C500	1-162-306-11	CERAMIC	0.01uF	20%	16V
C501	1-164-159-11	CERAMIC	0.1uF		50V
C502	1-162-306-11	CERAMIC	0.01uF	20%	16V

Ref. No.	Part No.	Description			Remark
C503	1-162-286-31	CERAMIC	220PF	10%	50V
C504	1-164-159-11	CERAMIC	0.1uF		50V
C505	1-126-160-11	ELECT	1uF	20%	50V
C506	1-164-159-11	CERAMIC	0.1uF		50V
C507	1-124-584-00	ELECT	100uF	20%	10V
C508	1-164-159-11	CERAMIC	0.1uF		50V
C509	1-164-159-11	CERAMIC	0.1uF		50V
C510	1-162-306-11	CERAMIC	0.01uF	20%	16V
C511	1-164-159-11	CERAMIC	0.1uF		50V
C560	1-124-584-00	ELECT	100uF	20%	10V
C600	1-124-584-00	ELECT	100uF	20%	10V
C601	1-164-159-11	CERAMIC	0.1uF		50V
C602	1-164-159-11	CERAMIC	0.1uF		50V
C611	1-162-306-11	CERAMIC	0.01uF	20%	16V
C613	1-164-159-11	CERAMIC	0.1uF		50V
C620	1-127-550-11	ELECT(SOLID)	3.3uF	20%	16V
C621	1-124-584-00	ELECT	100uF	20%	10V
C622	1-124-584-00	ELECT	100uF	20%	10V
C623	1-164-159-11	CERAMIC	0.1uF		50V
C642	1-164-159-11	CERAMIC	0.1uF		50V
C644	1-102-518-11	CERAMIC	33PF	5%	50V
C910	1-126-160-11	ELECT	1uF	20%	50V
		< CONNECTOR >			
* CN100	1-568-854-11	SOCKET, CONNECTOR 11P			
* CN500	1-568-865-11	SOCKET, CONNECTOR 23P			
CN501	1-568-860-11	SOCKET, CONNECTOR 17P			
CN600	1-691-652-11	SOCKET, CONNECTOR 23P			
CN601	1-691-649-11	SOCKET, CONNECTOR 17P			
* CN640	1-568-862-11	SOCKET, CONNECTOR 19P			
* CN911	1-564-519-11	PLUG, CONNECTOR 4P			
* CN912	1-564-518-11	PLUG, CONNECTOR 3P			
		< DIODE >			
D560	8-719-010-38	DIODE UZ-5.1BSB			
D561	8-719-010-38	DIODE UZ-5.1BSB			
D910	8-719-010-77	DIODE UZ-13BSA-TP			
D911	8-719-987-63	DIODE 1N4148M			
		< IC >			
IC500	8-759-496-64	IC uPD78078GF-075-3BA			
IC501	8-759-481-02	IC M62016L			
IC502	8-759-269-08	IC SN74HCT04AN			
IC560	8-759-277-68	IC LB1648			
IC600	8-759-480-97	IC uPD784215GF-501-3BA			
IC601	8-759-463-99	IC M5M5256DFP-70XL			
IC641	8-759-927-72	IC TL1591CP			
		< TRANSISTOR >			
Q500	8-729-422-73	TRANSISTOR UN4212			
Q501	8-729-620-05	TRANSISTOR 2SC2603-EF			
Q600	8-729-422-73	TRANSISTOR UN4212			
Q601	8-729-422-73	TRANSISTOR UN4212			
Q602	8-729-118-01	TRANSISTOR 2SB1116			
Q603	8-729-118-01	TRANSISTOR 2SB1116			
Q604	8-729-900-63	TRANSISTOR DTA124ES			
Q605	8-729-900-89	TRANSISTOR DTC144ES			
Q641	8-729-620-05	TRANSISTOR 2SC2603-EF			

Ref. No.	Part No.	Description			Remark
Q910	8-729-119-76	TRANSISTOR 2SA1175-HFE			
Q911	8-729-620-05	TRANSISTOR 2SC2603-EF			
Q912	8-729-018-59	TRANSISTOR 2SB1375-LC			
		< RESISTOR >			
R501	1-247-807-31	CARBON	100	5%	1/4W
R502	1-247-807-31	CARBON	100	5%	1/4W
R503	1-247-807-31	CARBON	100	5%	1/4W
R504	1-247-807-31	CARBON	100	5%	1/4W
R505	1-247-807-31	CARBON	100	5%	1/4W
R506	1-249-417-11	CARBON	1K	5%	1/4W
R507	1-249-417-11	CARBON	1K	5%	1/4W
R508	1-247-807-31	CARBON	100	5%	1/4W
R509	1-249-417-11	CARBON	1K	5%	1/4W
R512	1-249-441-11	CARBON	100K	5%	1/4W
R514	1-247-807-31	CARBON	100	5%	1/4W
R516	1-247-807-31	CARBON	100	5%	1/4W
R517	1-247-807-31	CARBON	100	5%	1/4W
R518	1-247-807-31	CARBON	100	5%	1/4W
R519	1-249-417-11	CARBON	1K	5%	1/4W
R523	1-249-435-11	CARBON	33K	5%	1/4W
R524	1-249-439-11	CARBON	68K	5%	1/4W
R526	1-249-429-11	CARBON	10K	5%	1/4W
R530	1-247-807-31	CARBON	100	5%	1/4W
R531	1-247-807-31	CARBON	100	5%	1/4W
R532	1-247-807-31	CARBON	100	5%	1/4W
R533	1-247-807-31	CARBON	100	5%	1/4W
R534	1-247-807-31	CARBON	100	5%	1/4W
R535	1-247-807-31	CARBON	100	5%	1/4W
R536	1-249-429-11	CARBON	10K	5%	1/4W
R537	1-249-429-11	CARBON	10K	5%	1/4W
R538	1-249-429-11	CARBON	10K	5%	1/4W
R539	1-249-429-11	CARBON	10K	5%	1/4W
R540	1-249-429-11	CARBON	10K	5%	1/4W
R541	1-249-429-11	CARBON	10K	5%	1/4W
R542	1-249-417-11	CARBON	1K	5%	1/4W
R543	1-247-807-31	CARBON	100	5%	1/4W
R545	1-247-807-31	CARBON	100	5%	1/4W
R546	1-247-807-31	CARBON	100	5%	1/4W
R547	1-247-807-31	CARBON	100	5%	1/4W
R548	1-249-429-11	CARBON	10K	5%	1/4W
R550	1-249-441-11	CARBON	100K	5%	1/4W
R551	1-247-887-00	CARBON	220K	5%	1/4W
R552	1-249-441-11	CARBON	100K	5%	1/4W
R553	1-249-429-11	CARBON	10K	5%	1/4W
R560	1-247-807-31	CARBON	100	5%	1/4W
R561	1-247-807-31	CARBON	100	5%	1/4W
R570	1-249-441-11	CARBON	100K	5%	1/4W
R571	1-249-441-11	CARBON	100K	5%	1/4W
R572	1-249-441-11	CARBON	100K	5%	1/4W
R573	1-249-441-11	CARBON	100K	5%	1/4W
R574	1-249-441-11	CARBON	100K	5%	1/4W
R575	1-249-441-11	CARBON	100K	5%	1/4W
R576	1-249-441-11	CARBON	100K	5%	1/4W
R577	1-249-441-11	CARBON	100K	5%	1/4W
R610	1-249-429-11	CARBON	10K	5%	1/4W
R611	1-249-429-11	CARBON	10K	5%	1/4W
R612	1-249-429-11	CARBON	10K	5%	1/4W

SUB **SW** **TRANS-A** **TRANS-B** **TRAY MOTOR** **U/D MOTOR**

Ref. No.	Part No.	Description			Remark
R613	1-249-429-11	CARBON	10K	5%	1/4W
R614	1-249-429-11	CARBON	10K	5%	1/4W
R615	1-249-429-11	CARBON	10K	5%	1/4W
R616	1-249-429-11	CARBON	10K	5%	1/4W
R617	1-249-429-11	CARBON	10K	5%	1/4W
R618	1-247-807-31	CARBON	100	5%	1/4W
R619	1-247-807-31	CARBON	100	5%	1/4W
R620	1-247-807-31	CARBON	100	5%	1/4W
R621	1-247-807-31	CARBON	100	5%	1/4W
R622	1-249-417-11	CARBON	1K	5%	1/4W
R624	1-249-429-11	CARBON	10K	5%	1/4W
R626	1-247-807-31	CARBON	100	5%	1/4W
R627	1-247-807-31	CARBON	100	5%	1/4W
R630	1-249-441-11	CARBON	100K	5%	1/4W
R631	1-249-441-11	CARBON	100K	5%	1/4W
R632	1-249-441-11	CARBON	100K	5%	1/4W
R633	1-249-441-11	CARBON	100K	5%	1/4W
R634	1-249-441-11	CARBON	100K	5%	1/4W
R636	1-249-441-11	CARBON	100K	5%	1/4W
R637	1-249-441-11	CARBON	100K	5%	1/4W
R638	1-249-441-11	CARBON	100K	5%	1/4W
R642	1-247-843-11	CARBON	3.3K	5%	1/4W
R645	1-249-429-11	CARBON	10K	5%	1/4W
R646	1-249-436-11	CARBON	39K	5%	1/4W
R647	1-249-427-11	CARBON	6.8K	5%	1/4W
R648	1-249-413-11	CARBON	470	5%	1/4W
R650	1-247-807-31	CARBON	100	5%	1/4W
R651	1-247-807-31	CARBON	100	5%	1/4W
R652	1-249-421-11	CARBON	2.2K	5%	1/4W
R653	1-249-421-11	CARBON	2.2K	5%	1/4W
R655	1-249-429-11	CARBON	10K	5%	1/4W
R660	1-247-807-31	CARBON	100	5%	1/4W
R661	1-247-807-31	CARBON	100	5%	1/4W
R662	1-247-807-31	CARBON	100	5%	1/4W
R663	1-247-807-31	CARBON	100	5%	1/4W
R664	1-247-807-31	CARBON	100	5%	1/4W
R665	1-247-807-31	CARBON	100	5%	1/4W
R666	1-247-807-31	CARBON	100	5%	1/4W
R667	1-247-807-31	CARBON	100	5%	1/4W
R668	1-247-807-31	CARBON	100	5%	1/4W
R669	1-247-807-31	CARBON	100	5%	1/4W
R670	1-247-807-31	CARBON	100	5%	1/4W
R671	1-247-807-31	CARBON	100	5%	1/4W
R672	1-247-807-31	CARBON	100	5%	1/4W
R673	1-247-807-31	CARBON	100	5%	1/4W
R674	1-247-807-31	CARBON	100	5%	1/4W
R675	1-247-807-31	CARBON	100	5%	1/4W
R677	1-247-807-31	CARBON	100	5%	1/4W
R678	1-247-807-31	CARBON	100	5%	1/4W
R679	1-247-807-31	CARBON	100	5%	1/4W
R680	1-247-807-31	CARBON	100	5%	1/4W
R681	1-247-807-31	CARBON	100	5%	1/4W
R682	1-247-807-31	CARBON	100	5%	1/4W
R683	1-247-807-31	CARBON	100	5%	1/4W
R684	1-247-807-31	CARBON	100	5%	1/4W
R685	1-247-807-31	CARBON	100	5%	1/4W
R915	1-249-441-11	CARBON	100K	5%	1/4W

Ref. No.	Part No.	Description			Remark
R916	1-249-441-11	CARBON	100K	5%	1/4W
⚠R917	1-249-419-11	CARBON	1.5K	5%	1/4W F
⚠R918	1-219-786-11	FUSIBLE	22	5%	1/4W F
		< VIBRATOR >			
X500	1-760-489-11	VIBRATOR, CERAMIC (5MHz)			
X600	1-767-661-11	VIBRATOR, CERAMIC (12.5MHz)			
**********					
*	1-667-392-11	SW BOARD			
		*********			
		< CONNECTOR >			
* CN206	1-750-494-31	PIN, CONNECTOR (PC BOARD) 6P			
		< SWITCH >			
S681	1-572-467-61	SWITCH, PUSH (1 KEY) (LIMIT-IN)			
S682	1-692-377-31	SWITCH, PUSH (1 KEY) (REFRECT)			
S683	1-692-847-21	SWITCH, PUSH (1 KEY) (PROTECT)			
**********					
*	1-667-079-11	TRANS-A BOARD			
		**********			
	1-533-293-11	FUSE HOLDER			
		< CONNECTOR >			
* CN992	1-580-230-31	PIN, CONNECTOR (PC BOARD) 2P			
		< FUSE >			
⚠F990	1-532-464-31	FUSE, TIME-LAG (2.5A/250V) (MY, SP, HK, JE)			
		< SWITCH >			
⚠S990	1-572-675-11	SWITCH, POWER VOLTAGE CHANGE (VOLTAGE SELECTOR) (MY, SP, HK, JE)			
**********					
*	1-667-080-11	TRANS-B BOARD			
		**********			
		< CONNECTOR >			
* CN990	1-564-522-11	PLUG, CONNECTOR 7P			
* CN991	1-564-518-11	PLUG, CONNECTOR 3P			
**********					
*	1-651-391-11	TRAY MOTOR BOARD			
		**********			
		< CAPACITOR >			
C502	1-164-159-11	CERAMIC	0.1uF	50V	
**********					
*	1-651-396-11	U/D MOTOR BOARD			
		**********			
		< CAPACITOR >			
C501	1-164-159-11	CERAMIC	0.1uF	50V	
**********					

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
		MISCELLANEOUS	
		**********	
13	1-773-116-11	WIRE (FLAT TYPE) (19 CORE) (170 mm)	
51	1-782-938-11	WIRE (FLAT TYPE) (23 CORE) (200 mm)	
57	1-782-937-11	WIRE (FLAT TYPE) (17 CORE) (130 mm)	
59	1-769-937-11	WIRE (FLAT TYPE) (11 CORE)	
60	1-773-105-11	WIRE (FLAT TYPE) (19 CORE) (70 mm)	
62	1-233-544-21	ENCAPSULATED COMPONENT (FM/AM TUNER UNIT) (US)	
62	1-233-546-21	ENCAPSULATED COMPONENT (FM/AM TUNER UNIT) (MY, SP, HK, JE)	
62	1-693-387-21	TUNER (FM/MW/LW) (AEP, UK, G, AED)	
63	1-782-940-11	WIRE (FLAT TYPE) (17 CORE) (200 mm)	
64	1-782-941-11	WIRE (FLAT TYPE) (23 CORE) (230 mm)	
⚠66	1-558-943-41	CORD, POWER (JE)	
⚠66	1-575-042-21	CORD, POWER (US)	
⚠66	1-575-651-21	CORD, POWER (AEP, G, AED, MY, SP, HK)	
⚠66	1-696-571-11	CORD, POWER (UK)	
⚠74	1-569-007-11	ADAPTOR, CONVERSION 2P (JE)	
⚠74	1-569-008-11	ADAPTOR, CONVERSION 2P (MY, SP)	
⚠74	1-770-019-11	ADAPTOR, CONVERSION PLUG 3P (HK)	
75	1-543-798-11	FILTER, CLAMP (FERRITE CORE)	
110	1-782-910-11	WIRE (FLAT TYPE) (7 CORE)	
164	1-667-955-11	FLEXIBLE BOARD	
169	1-782-909-11	WIRE (FLAT TYPE) (13 CORE)	
⚠203	8-583-028-02	OPTICAL PICK-UP KMS-260A/J1N (for MD)	
204	1-664-039-11	OP TRANSLATION FLEXIBLE BOARD	
319	1-452-719-11	MAGNET ASSY	
⚠351	8-848-379-31	OPTICAL PICK-UP KSS-213BA/F-NP (for CD)	
352	1-769-069-11	WIRE (FLAT TYPE) (16 CORE)	
HR901	1-500-489-11	HEAD, OVER WRITE	
M101	X-4917-523-4	MOTOR ASSY (SPINDLE)	
M102	X-4917-504-1	MOTOR ASSY (SLED)	
M501	X-4949-299-1	MOTOR ASSY (CDM48 U/D) (ELEVATOR UP/DOWN)	
M502	X-4944-463-1	MOTOR ASSY (LOADING)	
M901	A-4672-241-A	MOTOR ASSY, SPINDLE	
M902	A-4672-240-A	MOTOR ASSY, SLED	
M903	1-698-874-11	MOTOR, DC (LOADING)	
M904	1-698-874-11	MOTOR, DC (ELEVATOR UP/DOWN)	
M905	X-4949-160-1	MOTOR (HEAD) ASSY (OVER WRITE HEAD UP/DOWN)	
M910	1-698-997-11	FAN, DC	
S10	1-762-904-11	SWITCH, PUSH (1 KEY) (LOADING IN DETECT)	
S11	1-762-952-11	SWITCH, PUSH (1 KEY) (LOADING OUT DETECT)	
⚠T990	1-431-513-11	TRANSFORMER, POWER (AEP, UK, G, AED)	
⚠T990	1-431-514-11	TRANSFORMER, POWER (US)	
⚠T990	1-431-515-11	TRANSFORMER, POWER (MY, SP, HK, JE)	
**********			
		**********	
		HARDWARE LIST	
		**********	
#1	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
#2	7-685-872-09	SCREW +BVTT 3X8 (S)	
#3	7-685-650-79	SCREW +BVTP 3X16 TYPE2 IT-3	
#4	7-685-861-01	SCREW +BVTT 2.6X5 (S)	
#5	7-685-103-19	SCREW +P 2X5 TYPE2 NON-SLIT	
#6	7-627-553-17	PRECISION SCREW +P 2X2 TYPE 3	
#7	7-685-853-04	SCREW +BVTT 2X6 (S)	
#8	7-621-255-20	SCREW +BVTT 2X4 (S)	
#9	7-627-000-00	SCREW,PRECISION +P1.7X2.2TYPE3	
#10	7-627-852-08	SCREW,PRECISION +P 1.7X2.5	
#11	7-627-852-28	+P 1.7X3	
#12	7-685-871-01	SCREW +BVTT 3X6 (S)	
#13	7-621-775-00	SCREW +B 2.6X3	
#14	7-621-773-86	SCREW +B 2.6X4	
#15	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S	
#16	7-621-255-15	SCREW +P 2X3	
#17	7-685-102-19	SCREW +P 2X4 TYPE2 NON-SLIT	
#18	7-624-106-04	STOP RING 3.0, TYPE-E	
#19	7-624-102-04	STOP RING 1.5, TYPE-E	
#20	7-682-562-09	SCREW +B 4X10	
#21	7-684-024-04	N 4, TYPE 2	
#22	7-685-903-11	+PTPWH 3X6 (TYPE 2)	

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9-920-962-11

Sony Corporation
Home A&V Products Company

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